DRINKING WATER SURVEILLANCE PROGRAM

BROCKVILLE WATER TREATMENT PLANT

REPORT FOR 1991 AND 1992

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REPORT FOR 1991 AND 1992

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

BROCKVILLE WATER TREATMENT PLANT
1991 AND 1992 REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to include all municipal supplies in Ontario. In 1991, 96 supplies and in 1992, 109 supplies were being monitored.

The Brockville water treatment plant is a direct filtration plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. This plant has a design capacity of 40.7 x 1000 m^3/day. The Brockville water treatment plant serves a population of approximately 21,200.

Water at the plant and at two locations in the distribution system was sampled for the presence of approximately 180 parameters. Parameters were divided into the following groups: bacteriological, inorganic and physical (laboratory chemistry, field chemistry and metals), organic (chloroaromatics, chlorophenols, pesticides and PCB, phenolics, polyaromatic hydrocarbons and volatiles) and radiological (radionuclides). Most laboratory analyses were conducted at the Ministry of the Environment and Energy facilities in Rexdale, Ontario. Radionuclides were analyzed by the Ministry of Labour.

Table A is a summary of all results by group.

In 1992, the Ontario Drinking Water Objective for fluoride was revised to 1.5 mg/L to reflect operational requirements. Two of four treated and distributed water samples exceeded 1.5 mg/L with a maximum value of 1.68 mg/L. It is recommended that the fluoride addition practices be reviewed.

No other known health related guidelines were exceeded.

The Brockville water treatment plant, for the sample years 1991 and 1992, produced good quality water and this was maintained in the distribution system.

TABLE A
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

SUMMARY TABLE BY SCAN

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

SCAN	SITE RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	ALDERSHOT AVE TESTS	ALDERSHOT AVE POSITIVE	ALDERSHOT AVE %POSITIVE	PEDEN BLVD TESTS	PEDEN BLVD POSITIVE	PEDEN BLVD %POSITIVE
BACTERIOLOGICAL	42	22	52	14	2	14	13	6	46	9	7	77
CHEMISTRY (FIELD)	43	43	100	87	86	98	155	154	99	108	108	100
CHEMISTRY (LABORATORY)	356	298	83	360	294	81	546	483	88	377	333	88
METALS	360	128	35	360	127	35	598	242	40	414	183	44
CHLOROAROMATICS	154	0	0	154	0	0	140	0	0	84	0	0
CHLOROPHENOLS	6	0	0	6	0	0	.	.	.	.	.	.
PESTICIDES AND PCB	361	0	0	348	0	0	222	0	0	134	0	0
PHENOLICS	15	2	13	15	0	0	.	.	.	.	.	.
POLYAROMATIC HYDROCARBONS	102	0	0	102	0	0	85	0	0	68	0	0
SPECIFIC PESTICIDES	17	0	0	17	0	0	2	0	0	2	0	0
VOLATILES	441	0	0	441	59	13	383	53	13	261	36	13
RADIONUCLIDES	21	6	28	21	4	19	.	.	.	.	.	.
TOTAL	1,918	499		1,925	572		2,144	938		1,457	667	

DRINKING WATER SURVEILLANCE PROGRAM

BROCKVILLE WATER TREATMENT PLANT
1991 AND 1992 REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to include all municipal supplies in Ontario. In 1991, 96 supplies and in 1992, 109 supplies were being monitored.

Appendix A has a full description of the DWSP.

The DWSP was initiated for the Brockville water treatment plant in February of 1990. A previous annual report was published for 1990.

PLANT DESCRIPTION

The Brockville water treatment plant is a direct filtration plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. This plant has a design capacity of 40.7 x 1000 m^3/day. The Brockville water treatment plant serves a population of approximately 21,200.

The sample day flows ranged from 13.1 x 1000 m^3/day to 19.6 x 1000 m^3/day.

General plant information is presented in Table 1 and a schematic of plant processes, chemical addition points and sampling locations in Figure 1.

SAMPLING AND ANALYSES

Stringent DWSP sampling protocols were followed to ensure that all samples were collected in a uniform manner (see Appendix B).

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration.

Retention time was calculated by dividing the volume of water between two sampling points by sample day flow. For example, if it was determined that retention time within the plant was five hours, then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

To obtain a representative raw water sample, free from any added chemicals, at plants which used chlorine for zebra mussel control, the operator was required to turn off the chlorine feed to the mouth of the intake and allow enough time for the chlorinated water to clear from the intake works.

Plant operating personnel routinely analyzed parameters for process control (Table 2).

At all distribution system locations, two types of samples were obtained, a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples were used to make an assessment of the change in the levels of inorganic compounds and metals due to leaching from, or deposition on, the plumbing system. The only analyses carried out on the standing samples, therefore, were laboratory chemistry and metals. The free flow sample represented fresh water from the distribution system main, since the sample tap was flushed for five minutes prior to sampling.

Water at the plant and at two locations in the distribution system was sampled for the presence of approximately 180 parameters. Parameters were divided into the following groups: bacteriological, inorganic and physical (laboratory chemistry, field chemistry and metals), organic (chloroaromatics, chlorophenols, pesticides and PCB, phenolics, polyaromatic hydrocarbons and volatiles) and radiological (radionuclides). Most laboratory analyses were conducted at the Ministry of the Environment and Energy facilities in Rexdale, Ontario. Radionuclides were analyzed by the Ministry of Labour.

RESULTS

Field measurements were recorded on the day of sampling and were entered onto the DWSP database as submitted by plant personnel.

Table 3 contains information on delay time between the raw and treated water sampling, flow rate, and treatment chemicals dosages.

Table 4 is a summary of all results by parameter and by water type. If a parameter was not detected, the total number of negative

sample results is given. In contrast, if a parameter was detected at any location, the detailed results for all samples are provided.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment and Energy laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on Tables 4 and 5. Parameters are listed alphabetically within each scan.

DISCUSSION

GENERAL

Water quality was judged by comparison with the Ontario Drinking Water Objectives publication (ODWOs). When an Ontario Drinking Water Objective (ODWO) was not available, guidelines/limits from other agencies were used. These guidelines were obtained from the Parameter Listing System database.

The guidelines are evaluated on the results from the free flowing samples. Standing samples in the distribution system can show elevated concentrations in certain metals if the water is corrosive or if the standing time is excessive. Flushing the tap until the water achieves the coolest temperature will ensure that the water used for consumption will contain minimum concentrations of metals.

IN THIS REPORT, DISCUSSION IS LIMITED TO:

- **THE TREATED AND DISTRIBUTED WATER;**
- **ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES; AND**
- **POSITIVE ORGANIC PARAMETERS DETECTED.**

BACTERIOLOGICAL

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality. Routine monitoring programs usually require that multiple samples be collected in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Standard plate count was the only bacteriological analysis conducted on the treated and distributed water.

Standard plate count is a test used to supplement routine analysis for coliform bacteria. The limit for standard plate count (at 35°C after 48 hours) in the ODWOs is 500 counts/mL (based on a geometric mean of 5 or more samples). DWSP bacteriological analysis of treated and distributed water was limited to standard plate count.

Standard plate count (membrane filtration) exceeded the ODWO Aesthetic Objective of 500 counts/mL in 6 of 36 treated and distributed water samples with a maximum reported value of >2,400 counts/mL.

INORGANIC & PHYSICAL

CHEMISTRY (FIELD)

It is desirable that the temperature of drinking water be less than 15°C. The palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of delivered water may increase in the distribution system due to the warming effect of soil in late summer and fall and/or as a result of higher temperatures in the source water.

Field temperature exceeded the ODWO Aesthetic Objective of 15°C in 10 of 34 treated and distributed water samples with a maximum reported value of 22.0°C.

CHEMISTRY (LABORATORY)

Where fluoridation is practiced the recommended concentration is 1.2 mg/L and deviation from this optimum should not exceed + or - 0.2 mg/L. In the summer of 1992 the ODWO Maximum Acceptable Concentration for fluoride was lowered from 2.4 mg/L to 1.5 mg/L. Naturally occurring fluoride should not exceed 2.4 mg/L. The Medical Officer of Health should be notified of any exceedances.

Fluoride exceeded the ODWO Maximum Acceptable Concentration of 1.5 mg/L (where fluoridation is practiced) in 2 of 4 treated and distributed water samples, taken after the new guideline was established, with a maximum reported value of 1.68 mg/L. The treatment process for fluoride addition should be reviewed.

The ODWOs indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters provides an acceptable balance between corrosion and encrustation. Water supplies with a hardness greater than 200 mg/L are considered poor and possess a tendency to form scale deposits and result in excessive soap consumption.

Hardness exceeded the ODWO Recommended Operational Guideline of 80-100 mg/L in all 37 treated and distributed water samples with a maximum reported value of 137.9 mg/L.

METALS

At present, there is no evidence that aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of aluminum in treated water is important to measure the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as aluminum in the water leaving the plant to avoid problems in the distribution system.

Aluminum exceeded the ODWO Recommended Operational Guideline of 100 ug/L in 25 of 37 treated and distributed water samples with a maximum reported value of 260 ug/L.

ORGANIC

CHLOROAROMATICS

The results of the chloroaromatic scan showed that none were detected above trace levels.

CHLOROPHENOLS

The results of the chlorophenol scan showed that none were detected.

PESTICIDES AND PCB

The results of the pesticide and PCB scan showed that none were detected above trace levels.

PHENOLICS

The results of the phenolics test showed that none were detected above trace levels.

POLYAROMATIC HYDROCARBONS

The results of the polyaromatic hydrocarbon scan showed that none were detected.

SPECIFIC PESTICIDES

The results of the specific pesticide scan showed that none were detected.

VOLATILES

The detection of benzene, ethylbenzene, toluene and xylenes at low, trace levels may be a laboratory artifact derived from the analytical methodology. Trace levels of styrene are considered to be laboratory artifacts resulting from the sample shipping containers.

Styrene was found at a positive level in 1 of the 37 treated and distributed water samples analyzed. The maximum observed level was 0.6 ug/L. This was below the United States Environmental Protection Agency Maximum Contaminant Level of 100 ug/L.

Trihalomethanes (THMs) are produced during the water treatment process and will always occur in chlorinated waters. THMs are comprised of chloroform, chlorodibromomethane and dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. Only total THM results are discussed. Starting in 1991, samples from the distribution system were quenched with sodium thiosulphate to stop the further production of THMs in the sample bottle. This provided a more representative estimation of the THMs consumed in tap water.

Total trihalomethanes were found at positive levels in all 37 treated and distributed water samples analyzed. The maximum observed level was 49.4 ug/L. This was below the ODWO Maximum Acceptable Concentration of 350 ug/L.

RADIOLOGICAL

RADIONUCLIDES

There are more than 200 radionuclides, some of which occur naturally and others which originate from the activities of society. The radionuclides currently of greater interest from a health view-point are tritium, strontium-90, iodine-131, cesium-137 and radium-226. The gross beta and gross alpha determinations are suitable for preliminary screening except for tritium which must be measured separately. Radionuclides are measured in becquerels per litre (Bq/L). No results were above the available guidelines.

CONCLUSIONS

In 1992, the Ontario Drinking Water Objective for fluoride was revised to 1.5 mg/L to reflect operational requirements. Two of four treated and distributed water samples exceeded 1.5 mg/L with a maximum value of 1.68 mg/L. It is recommended that the fluoride addition practices be reviewed.

No other known health related guidelines were exceeded.

The Brockville water treatment plant, for the sample years 1991 and 1992, produced good quality water and this was maintained in the distribution system.

FIGURE 1

BROCKVILLE WATER TREATMENT PLANT

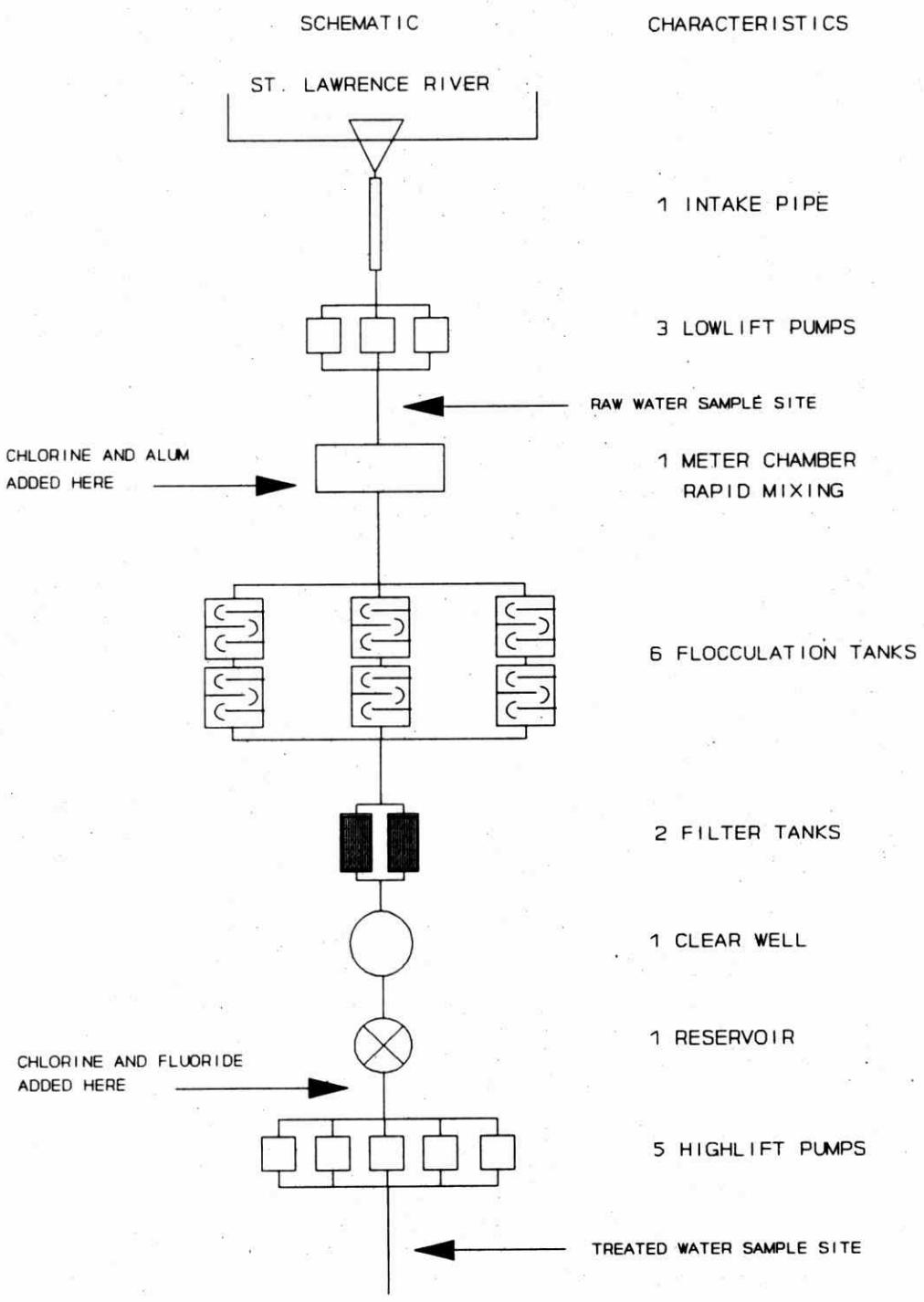

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM

PLANT GENERAL REPORT

PLANT NAME:	BROCKVILLE WTP
WORKS #:	220001263
UTM #:	180447604938300
DISTRICT:	KINGSTON
REGION:	SOUTHEAST
DISTRICT OFFICER:	J.D. BISHOP
SUPERINTENDENT:	LYLE BAKER
ADDRESS:	20 RIVERS AVE. BROCKVILLE, ONTARIO K6V 5R9 613-342-7819
MUNICIPALITY:	BROCKVILLE
AUTHORITY:	MUNICIPAL

PLANT INFORMATION

PLANT VOLUME:	5.450	(X 1000 M3)
DESIGN CAPACITY:	40.700	(X 1000 M3/DAY)
RATED CAPACITY:	-	(X 1000 M3/DAY)

MUNICIPALITY	POPULATION
BROCKVILLE	20,169
ELIZABETH TWP	1,000

TABLE 2
DRINKING WATER SURVEILLANCE PROGRAM
IN-PLANT MONITORING

PARAMETER	LOCATION	FREQUENCY
ALUMINUM	TREATED	VARIABLE
FREE CHLORINE RESIDUAL	RAW	EVERY 2 HOURS
	TREATED	EVERY 2 HOURS
TOTAL CHLORINE RESIDUAL	RAW	EVERY 2 HOURS
	TREATED	EVERY 2 HOURS
FLUORIDE	RAW	DAILY
	TREATED	EVERY 6 HOURS
HARDNESS	RAW	VARIABLE
	TREATED	VARIABLE
PH	RAW	EVERY 2 HOURS
	TREATED	EVERY 2 HOURS
TEMPERATURE	RAW	EVERY 2 HOURS
	TREATED	EVERY 2 HOURS
TURBIDITY	RAW	EVERY 2 HOURS
	TREATED	EVERY 2 HOURS

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM BROCKVILLE WTP SAMPLE DAY CONDITIONS AND TREATMENT CHEMICAL DOSAGES FOR 1991 AND 1992

DATE	DELAY * TIME(HRS)	FLOW (1000M3)	PRE CHLORINATION CHLORINE	COAGULATION ALUM LIQUID	FLUORIDATION HYDROFLUOSILICIC ACID	POST CHLORINATION CHLORINE
91 JAN 23	1.50	.000	.30	4.00	1.60	.70
91 FEB 20	2.66	13.090	.30	5.00	1.68	.70
91 MAR 20	2.65	13.350	.30	5.40	1.44	.70
91 APR 17	2.60	13.800	.40	7.00	1.25	.70
91 MAY 22	2.30	15.000	.70	4.70	1.67	1.00
91 JUN 19	2.10	16.080	.70	1.80	1.68	1.00
91 JUL 17	1.80	19.620	.70	2.10	1.67	1.00
91 AUG 21	.00	17.500	.80	1.30	1.90	1.10
91 SEP 18	2.50	13.507	.70	1.35	1.70	1.10
91 OCT 23	2.60	14.100	.60	1.30	1.50	1.10
91 NOV 20	2.40	14.600	.40	1.20	1.58	1.00
92 JAN 22	2.70	15.010	.30	1.03	1.60	.80
92 APR 27	2.40	13.160	.30	.50	1.20	.80
92 JUL 22	2.40	15.780	.60	.70	1.20	1.00
92 OCT 21	2.30	15.780	.90	1.80	1.15	.50

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

KEY TO TABLE 4 and 5

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
- 1. Maximum Acceptable Concentration (MAC)
- 1+. MAC for Total Trihalomethanes
- 2. Interim Maximum Acceptable Concentration (IMAC)
- 3. Aesthetic Objective (AO)
- 3*. AO for Total Xylenes
- 4. Recommended Operational Guideline
- 5. Health Related Guidance Value

B HEALTH & WELFARE CANADA (H&W)
- 1. Maximum Acceptable Concentration (MAC)
- 2. Proposed MAC
- 3. Interim MAC
- 4. Aesthetic Objective (AO)

C WORLD HEALTH ORGANIZATION (WHO)
- 1. Guideline Value (GV)
- 2. Tentative GV
- 3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
- 1. Maximum Contaminant Level (MCL)
- 2. Suggested No-Adverse Effect Level (SNAEL)
- 3. Lifetime Health Advisory
- 4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
- 1. Health Related Guideline Level
- 2. Aesthetic Guideline Level
- 3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurement Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!48	No Data: Sample Age Exceeded 48 Hours
!AR	No Data: No Numeric Results
!AW	No Data: Analysis Withdrawn
!BT	No Data: Sample Broken In Transit
!CS	No Data: Contamination Suspected
!EF	No Data: Laboratory Equipment Failure
!IR	No Data: Insufficient Sample
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!PE	No Data: Procedure Error: Sample Discarded
!PR	No Data: Preservative Required
!QU	No Data: Quality Control Unacceptable
!RE	No Data: Received Empty
!RO	No Data: No Numeric Results
!SM	No Data: Sample Missing
!SS	No Data: Sample Improperly Preserved
!U	No Data: Sample Unsuitable For Analysis
!UB	No Data: Bottle Broken
!UN	No Data: Result Unreliable

!UR	No Data: Unpreserved Sample Required
A	Approximate Value
A3C	Approximate, Total Count Exceeded 300 Colonies
A>	Approximate Value, Exceeded Normal Range
APS	Additional Peak, Less Than, Not Priority Pollutant
ARO	Additional Information In Laboratory Report
CRO	Calculated Result Only
NAF	Not All Required Tests Found
RID	Ioncal Calculated on Incomplete Data Set
RMP	P and M-Xylene Not Separated
RRR	Result Obtained by Repeat Analysis
RRV	Rerun Verification
SFA	Sample Filtered: Filtrate Analyzed
SIL	Sample Incorrectly Labelled
SPS	Several Peaks, Small, Not Priority Pollutant
U48	Unreliable: Sample Age Exceeded 48 Hours
UAL	Unreliable: Sample Age Exceeded Limit
UAU	Unreliable: Sample Age Unknown
UCS	Unreliable: Contamination Suspected
WSD	Wrong Sample Description On Bottle

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
BACTERIOLOGICAL						
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)	
1991 JAN	BDL	.	.	.	.	.
1991 FEB	BDL	.	.	.	.	.
1991 MAR	BDL	.	.	.	.	.
1991 APR	1	.	.	.	.	.
1991 MAY	BDL	.	.	.	.	.
1991 JUN	BDL	.	.	.	.	.
1991 JUL	4	.	.	.	.	.
1991 AUG	4	.	.	.	.	.
1991 OCT	BDL	.	.	.	.	.
1991 NOV	2	.	.	.	.	.
1992 JAN	BDL	.	.	.	.	.
1992 APR	BDL	.	.	.	.	.
1992 JUL	BDL	.	.	.	.	.
1992 OCT	BDL	.	.	.	.	.
STANDRD PLATE CNT MF (CT/ML)			DET'N LIMIT = 0		GUIDELINE = 500 (A3)	
1991 JAN	.	6 <=>	8 <=>	.	2 <=>	.
1991 FEB	.	3 <=>	.	.	22	.
1991 MAR	.	8 <=>	2 <=>	.	5 <=>	.
1991 APR	.	3 <=>	10	.	.	.
1991 MAY	.	1 <=>	0 <=>	.	330	.
1991 JUN	.	1 <=>	7 <=>	.	240	.
1991 JUL	.	0 <=>	23	.	.	.
1991 AUG	.	22	.	.	290	.
1991 SEP	.	.	5 <=>	.	540	.
1991 OCT	.	1 <=>	47	.	2400 >	.
1991 NOV	.	7 <=>	2400 >	.	540	.
1992 JAN	.	7 <=>	40	.	.	.
1992 APR	.	7 <=>	2 <=>	.	.	.
1992 JUL	.	2400 >	2400 >	.	.	.
1992 OCT	.	0 <=>	1 <=>	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW		TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
BACTERIOLOGICAL							
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML (A1)		
1991 JAN	20	<=>	.	.	.	.	.
1991 FEB	8		.	.	.	.	.
1991 MAR	16		.	.	.	.	.
1991 APR	32		.	.	.	.	.
1991 MAY	32	A3C	.	.	.	.	.
1991 JUN	28	<=>	.	.	.	.	.
1991 JUL	17	A3C	.	.	.	.	.
1991 AUG	BDL		.	.	.	.	.
1991 OCT	BDL		.	.	.	.	.
1991 NOV	20	<=>	.	.	.	.	.
1992 JAN	50	<=>	.	.	.	.	.
1992 APR	20	<=>	.	.	.	.	.
1992 JUL	BDL		.	.	.	.	.
1992 OCT	20	<=>	.	.	.	.	.
T COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A		
1991 JAN	140		.	.	.	.	.
1991 FEB	20		.	.	.	.	.
1991 MAR	52		.	.	.	.	.
1991 APR	164		.	.	.	.	.
1991 MAY	1600	A3C	.	.	.	.	.
1991 JUN	2800	A3C	.	.	.	.	.
1991 JUL	8000	>	.	.	.	.	.
1991 AUG	70000	A3C	.	.	.	.	.
1991 OCT	2200		.	.	.	.	.
1991 NOV	2300		.	.	.	.	.
1992 JAN	950		.	.	.	.	.
1992 APR	90	<=>	.	.	.	.	.
1992 JUL	24000	>	.	.	.	.	.
1992 OCT	2800		.	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (FIELD)						
FLD CHLORINE (COMB) (MG/L)		DET'N LIMIT = 0		GUIDELINE = N/A		
1991 JAN	.	.210	.150	.120	.200	.050
1991 FEB	.	.150	.	.	.100	.100
1991 MAR	.	.140	.260	.120	.050	.050
1991 APR	.	.180	.110	.140	.	.
1991 MAY	.	.130	.160	.140	.050	.050
1991 JUN	.	.220	.180	.050	.100	.100
1991 JUL	.	.190	.130	.100	.	.
1991 AUG	.	.210	.	.	.050	.100
1991 SEP	.	.200	.160	.100	.100	.100
1991 OCT	.	.150	.150	.220	.150	.130
1991 NOV	.	.210	.230	.210	.130	.140
1992 JAN	.	.150	.220	.200	.	.
1992 APR	.	.070	.160	.150	.	.
1992 JUL	.	.210	.080	.090	.	.
1992 OCT	.	.260	.100	.120	.	.
FLD CHLORINE FREE (MG/L)		DET'N LIMIT = 0		GUIDELINE = N/A		
1991 JAN	.	.620	.350	.300	.100	.200
1991 FEB	.	.550	.	.	.200	.100
1991 MAR	.	.590	.220	.180	.200	.150
1991 APR	.	.630	.120	.070	.	.
1991 MAY	.	.810	.290	.060	.150	.100
1991 JUN	.	.680	.190	.060	.200	.100
1991 JUL	.	.750	.040	.030	.	.
1991 AUG	.	.810	.	.	.100	.100
1991 SEP	.	.830	.380	.030	.150	.100
1991 OCT	.	.920	.080	.550	.030	.030
1991 NOV	.	.760	.090	.070	.050	.040
1992 JAN	.	.610	.450	.250	.	.
1992 APR	.	.540	.300	.260	.	.
1992 JUL	.	.720	.040	.020	.	.
1992 OCT	.	.520	.080	.030	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (FIELD)						
FLD CHLORINE (TOTAL) (MG/L)			DET'N LIMIT = 0		GUIDELINE = N/A	
1991 JAN	.	.830	.500	.420	.300	.250
1991 FEB	.	.700	.	.	.300	.200
1991 MAR	.	.730	.380	.300	.250	.200
1991 APR	.	.810	.230	.210	.	.
1991 MAY	.	.940	.450	.200	.200	.150
1991 JUN	.	.900	.350	.110	.300	.200
1991 JUL	.	.940	.170	.130	.	.
1991 AUG	.	1.030	.	.	.150	.200
1991 SEP	.	1.030	.540	.130	.250	.200
1991 OCT	.	1.070	.230	.770	.180	.160
1991 NOV	.	.970	.320	.280	.180	.180
1992 JAN	.	.760	.610	.450	.	.
1992 APR	.	.610	.460	.410	.	.
1992 JUL	.	.930	.120	.110	.	.
1992 OCT	.	.780	.180	.150	.	.
FLD PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5 (A4)	
1991 JAN	8.200	7.700	8.000	8.100	7.900	7.700
1991 FEB	8.200	7.700	.	.	8.000	7.900
1991 MAR	8.100	7.700	7.800	7.500	7.500	7.500
1991 APR	7.800	7.500	7.700	7.500	.	.
1991 MAY	8.100	7.600	7.900	7.800	7.800	7.700
1991 JUN	8.200	7.700	7.700	7.600	7.700	7.800
1991 JUL	8.200	7.700	7.600	7.700	.	.
1991 AUG	8.100	7.600	.	.	7.800	7.700
1991 SEP	8.100	.	8.000	7.800	8.000	7.800
1991 OCT	8.100	7.600	7.600	7.700	7.600	7.700
1991 NOV	7.900	7.500	7.700	7.800	7.600	7.800
1992 JAN	8.200	8.100	7.500	7.600	.	.
1992 APR	8.200	7.800	7.600	7.700	.	.
1992 JUL	8.000	7.700	7.900	7.900	.	.
1992 OCT	8.200	7.800	7.400	7.500	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (FIELD)						
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A3)	
1991 JAN	1.000	.000	.000	2.000	4.500	8.500
1991 FEB	.	.	.	.	4.000	8.000
1991 MAR	.500	1.000	.	3.000	4.000	6.000
1991 APR	5.000	5.000	5.000	8.000	.	.
1991 MAY	10.000	10.000	10.000	10.000	10.000	11.500
1991 JUN	15.500	15.500	12.000	12.000	14.500	15.000
1991 JUL	19.400	20.000	18.000	17.000	.	.
1991 AUG	21.300	22.000	.	.	20.000	19.000
1991 SEP	18.000	18.000	17.000	17.000	16.000	18.000
1991 OCT	12.000	.	14.000	15.000	14.000	15.000
1991 NOV	7.000	7.500	10.000	11.000	11.000	20.000
1992 JAN	1.000	1.000	1.000	2.000	.	.
1992 APR	3.000	3.000	3.000	5.000	.	.
1992 JUL	17.000	17.000	17.000	17.000	.	.
1992 OCT	11.000	13.000	13.000	13.000	.	.
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
1991 JAN	1.200	.340	.510	.440	.440	.430
1991 FEB	.640	.390	.	.	.400	.480
1991 MAR	.920	.410	.480	.460	.500	.390
1991 APR	1.100	.320	.510	.470	.	.
1991 MAY	.	.250	.610	.560	.360	.350
1991 JUN	.920	.420	.350	.360	.390	.390
1991 JUL	1.200	.650	.540	.580	.	.
1991 AUG	.850	.400	.	.	.370	.340
1991 SEP	.940	.430	.400	.420	.320	.350
1991 OCT	.730	.340	.380	.480	.400	.440
1991 NOV	.860	.440	.400	.460	.380	.400
1992 JAN	.980	.370	.360	.580	.	.
1992 APR	1.300	.460	.430	.520	.	.
1992 JUL	.650	.400	.360	.560	.	.
1992 OCT	.820	.380	.440	.500	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
ALKALINITY (MG/L)			DET'N LIMIT = 0.2		GUIDELINE = 30-500 (A4)	
1991 JAN	100.600	96.300	95.600	95.700	95.800	95.900
1991 FEB	100.900	95.400	.	.	96.700	96.700
1991 MAR	102.500	97.900	98.900	98.800	98.100	98.500
1991 APR	104.500	95.300	95.500	96.000	.	.
1991 MAY	98.500	94.100	96.200	94.200	98.000	95.800
1991 JUN	100.600	94.800	95.800	95.800	96.500	96.500
1991 JUL	96.700	90.800	91.800	91.300	.	.
1991 AUG	93.300	86.600	.	.	87.600	87.800
1991 SEP	92.200	86.400	89.600	89.300	89.300	89.700
1991 OCT	96.600	88.900	89.300	89.800	90.000	89.500
1991 NOV	94.100	89.300	91.800	91.300	89.700	89.900
1992 JAN	95.300	91.200	93.100	90.900	.	.
1992 APR	97.100	92.700	93.000	93.400	.	.
1992 JUL	95.600	91.300	91.800	91.200	.	.
1992 OCT	96.500	91.500	91.400	91.100	.	.
CALCIUM (MG/L)			DET'N LIMIT = 0.20		GUIDELINE = 100 (F2)	
1991 JAN	40.400	39.700	40.100	40.500	40.900	41.400
1991 FEB	40.700	40.900	.	.	41.000	40.700
1991 MAR	40.600	39.600	40.600	40.600	40.000	40.400
1991 APR	40.800	41.600	41.400	40.800	.	.
1991 MAY	40.800	41.600	41.200	41.200	41.000	42.000
1991 JUN	39.000	39.000	39.600	39.600	39.600	39.400
1991 JUL	38.600	38.600	38.600	39.200	.	.
1991 AUG	36.000	35.800	.	.	36.200	36.800
1991 SEP	35.700	36.500	38.200	38.000	38.800	38.200
1991 OCT	38.200	38.600	39.200	38.200	38.600	38.200
1991 NOV	36.200	36.900	37.300	37.100	37.000	36.600
1992 JAN	37.900	37.700	35.900	37.000	.	.
1992 APR	37.650	37.750	37.700	37.450	.	.
1992 JUL	37.250	36.650	36.950	37.150	.	.
1992 OCT	37.150	36.900	37.750	37.450	.	.
CYANIDE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 0.2 (A1)	
26 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
	CHEMISTRY (LABORATORY)					
CHLORIDE (MG/L)			DET'N LIMIT = 0.20		GUIDELINE = 250 (A3)	
1991 JAN	22.100	22.700	22.400	22.500	22.900	22.800
1991 FEB	21.600	22.300	.	.	22.400	22.400
1991 MAR	21.600	22.500	22.400	22.300	22.300	22.200
1991 APR	21.000	21.600	21.600	21.600	.	.
1991 MAY	20.100	21.600	21.600	21.500	21.600	21.600
1991 JUN	20.900	22.300	23.000	23.000	22.400	22.300
1991 JUL	22.300	23.800	23.300	23.400	.	.
1991 AUG	22.100	23.500	.	.	24.200	23.800
1991 SEP	22.000	23.500	24.200	23.700	23.900	23.800
1991 OCT	22.100	23.600	24.300	24.400	24.600	24.700
1991 NOV	22.000	23.100	23.100	23.000	23.500	23.400
1992 JAN	21.600	22.700	22.900	22.800	.	.
1992 APR	21.200	21.900	22.000	21.900	.	.
1992 JUL	21.100	22.500	22.600	22.600	.	.
1992 OCT	21.300	22.800	22.500	22.500	.	.
COLOUR (HZU)			DET'N LIMIT = 0.50		GUIDELINE = 5 (A3)	
1991 JAN	2.500	1.000 <T	1.000 <T	1.000 <T	1.500 <T	1.500 <T
1991 FEB	2.000 <T	1.500 <T	.	.	4.500	1.500 <T
1991 MAR	3.000	1.500 <T	2.000 <T	2.000 <T	2.500	2.500
1991 APR	4.000	1.500 <T	2.000 <T	2.500	.	.
1991 MAY	4.000	1.500 <T	2.000 <T	2.500	1.500 <T	2.000 <T
1991 JUN	3.000	1.500	1.500	1.500	2.000	2.000
1991 JUL	2.000	.500 <T	1.000	1.500	.	.
1991 AUG	1.500	.500 <T	.	.	1.000	1.000 <T
1991 SEP	2.500	1.000	.500 <T	1.500	1.000	1.000
1991 OCT	2.000	1.000 <T	1.000 <T	1.500	2.500	1.000
1991 NOV	1.000 <T	BDL	.500 <T	1.000	.500 <T	.500 <T
1992 JAN	2.000	1.000 <T	1.500	1.500	.	.
1992 APR	2.000	.500 <T	BDL	BDL	.	.
1992 JUL	3.000	1.000 <T	2.500	2.000	.	.
1992 OCT	2.000	.500 <T	2.000	2.000	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1.0		GUIDELINE = 400 (F2)	
1991 JAN	313	316	315	315	316	317
1991 FEB	313	315	.	.	316	317
1991 MAR	313	316	316	308	315	316
1991 APR	309	309	308	309	.	.
1991 MAY	293	296	296	296	297	298
1991 JUN	312	314	316	315	316	316
1991 JUL	305	307	304	303	.	.
1991 AUG	297	298	.	.	301	301
1991 SEP	307	309	307	307	307	308
1991 OCT	308	310	312	310	311	310
1991 NOV	307	309	310	309	310	311
1992 JAN	319	320	322	321	.	.
1992 APR	305	306	306	308	.	.
1992 JUL	311	313	313	311	.	.
1992 OCT	303	306	306	306	.	.
DISS ORG CARBON (MG/L)			DET'N LIMIT = 0.10		GUIDELINE = 5.0 (A3)	
1991 JAN	2.100	2.200	2.000	2.200	2.100	2.000
1991 FEB	2.500	2.000	.	.	2.000	1.900
1991 MAR	2.300	2.300	2.200	2.300	2.400	2.300
1991 APR	2.300	2.100	2.100	2.100	.	.
1991 MAY	2.300	2.200	2.400	2.400	2.200	2.300
1991 JUN	2.300	2.400	2.300	2.300	2.200	2.400
1991 JUL	1.900	1.900	1.800	1.900	.	.
1991 AUG	2.200	2.300	.	.	2.200	2.200
1991 SEP	2.200	2.000	2.000	1.900	1.900	2.100
1991 OCT	1.900	1.900	1.800	1.800	1.900	1.800
1991 NOV	2.000	1.900	1.800	1.900	1.900	2.100
1992 JAN	2.000	2.100	2.000	2.000	.	.
1992 APR	2.000	2.000	2.200	2.300	.	.
1992 JUL	1.800	1.900	1.800	1.800	.	.
1992 OCT	1.900	2.200	2.100	2.200	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
	CHEMISTRY (LABORATORY)					
FLUORIDE (MG/L)			DET'N LIMIT = 0.01		GUIDELINE = 1.5 (A1)	
1991 JAN	.120	1.260	1.440	1.400	1.360	1.380
1991 FEB	.120	1.480	.	.	1.280	1.320
1991 MAR	.120	1.260	1.000	1.060	1.080	1.100
1991 APR	.120	1.100	1.120	1.120	.	.
1991 MAY	.100	1.640	1.520	1.460	1.360	1.360
1991 JUN	.120	1.360	1.340	.080	1.340	1.320
1991 JUL	.120	1.200	1.280	1.240	.	.
1991 AUG	.120	1.460	.	.	1.420	1.420
1991 SEP	.120	1.620	1.380	1.540	1.520	1.500
1991 OCT	.120	1.500	1.560	1.300	1.300	1.280
1991 NOV	.120	1.240	1.200	1.200	1.300	1.300
1992 JAN	.100	1.000	1.100	1.180	.	.
1992 APR	.120	1.280	1.400	1.400	.	.
1992 JUL	.140	1.180	1.000	.900	.	.
1992 OCT	.140	1.680	1.640	1.680	.	.
HARDNESS (MG/L)			DET'N LIMIT = 0.5		GUIDELINE = 80-100 (A4)	
1991 JAN	135.300	133.900	134.700	135.500	137.900	138.400
1991 FEB	136.400	136.300	.	.	136.800	135.800
1991 MAR	136.000	133.000	137.000	136.000	135.000	134.000
1991 APR	136.000	137.000	137.000	137.000	.	.
1991 MAY	134.000	137.000	135.000	138.000	136.000	138.000
1991 JUN	131.000	132.000	131.000	133.000	132.000	132.000
1991 JUL	131.000	131.000	130.000	132.000	.	.
1991 AUG	124.000	124.000	.	.	125.000	126.000
1991 SEP	123.500	126.500	131.000	131.000	133.000	132.000
1991 OCT	130.000	132.000	133.000	130.000	131.000	129.000
1991 NOV	125.700	128.000	128.700	129.800	128.300	127.000
1992 JAN	130.000	130.200	125.500	128.800	.	.
1992 APR	128.500	128.400	127.300	126.400	.	.
1992 JUL	127.350	125.590	126.530	127.300	.	.
1992 OCT	127.000	127.000	129.000	128.000	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
IONCAL (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
1991 JAN	.691	.703	2.643	2.746	3.034	5.038
1991 FEB	2.098 NAF	4.605 NAF	.	.	3.623 NAF	3.204 NAF
1991 MAR	1.717 NAF	.541 NAF	2.856 NAF	2.546 NAF	2.657 NAF	1.611 NAF
1991 APR	.169 NAF	5.043 NAF	4.381 NAF	4.136 NAF	.	.
1991 MAY	4.056 NAF	6.534 NAF	3.933 NAF	7.533 NAF	3.129 NAF	5.761 NAF
1991 JUN	.074 NAF	1.350 NAF	.592 NAF	1.403 NAF	1.770 NAF	1.651 NAF
1991 JUL	1.292 NAF	2.623 NAF	1.690 NAF	3.994 NAF	.	.
1991 AUG	.490	1.813	.	.	1.284	1.238
1991 SEP	.181 NAF	3.351 NAF	4.737 NAF	5.260 NAF	7.647 NAF	5.609 NAF
1991 OCT	.638 NAF	4.577 NAF	3.421 NAF	1.540 NAF	3.111 NAF	1.497 NAF
1991 NOV	1.357	4.304	2.682 NAF	4.045 NAF	2.306	5.169
1992 JAN	2.077	3.875	.771	2.300	.	.
1992 APR	.187	2.177	1.437	.529	.	.
1992 JUL	.741	.465	1.228	1.778	.	.
1992 OCT	.013	1.065	2.676	2.230	.	.
POTASSIUM (MG/L)			DET'N LIMIT = 0.01		GUIDELINE = 10 (F2)	
1991 JAN	1.490	1.490	1.630	1.630	1.590	1.560
1991 FEB	1.560	1.580	.	.	1.580	1.650
1991 MAR	1.550	1.500	1.600	1.750	1.600	1.550
1991 APR	1.400	1.450	1.400	1.400	.	.
1991 MAY	1.400	1.400	1.450	1.400	1.400	1.450
1991 JUN	1.450	1.500	1.500	1.500	1.550	1.550
1991 JUL	1.350	1.400	1.400	1.400	.	.
1991 AUG	1.500	1.500	.	.	1.450	1.550
1991 SEP	1.410	1.510	1.600	1.550	1.700	1.600
1991 OCT	1.700	1.700	1.700	1.700	1.650	1.650
1991 NOV	1.540	1.590	1.520	1.560	1.660	1.640
1992 JAN	1.410	1.510	1.430	1.470	.	.
1992 APR	1.498	1.520	1.540	1.513	.	.
1992 JUL	1.504	1.497	1.500	1.525	.	.
1992 OCT	1.746	1.773	1.669	1.696	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
	CHEMISTRY (LABORATORY)					
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
1991 JAN	.436	.170	.201	.176	.270	.256
1991 FEB	.401 NAF	.238 NAF	.	.	.195 NAF	.202 NAF
1991 MAR	.497	.436	.481	.451	.421	.437
1991 APR	.438	.186	.245	.211	.	.
1991 MAY	.488	.315	.411	.301	.346	.366
1991 JUN	.491	.325	.316	.226	.389	.407
1991 JUL	.401 NAF	.353 NAF	.309 NAF	.294 NAF	.	.
1991 AUG	.408	.203	.	.	.082	.080
1991 SEP	.336	.277	.373	.369	.368	.343
1991 OCT	.425	.243	.202	.213	.278	.232
1991 NOV	.131	.056	.152	.138	.009	-.005
1992 JAN	.455	.373	.401	.363	.	.
1992 APR	.402	.293	.343	.312	.	.
1992 JUL	.519	.302	.308	.368	.	.
1992 OCT	.394	.257	.156	.192	.	.
MAGNESIUM (MG/L)			DET'N LIMIT = 0.1		GUIDELINE = 30.0 (F2)	
1991 JAN	8.400	8.450	8.400	8.400	8.700	8.550
1991 FEB	8.450	8.250	.	.	8.350	8.300
1991 MAR	8.500	8.300	8.700	8.500	8.500	8.200
1991 APR	8.300	8.100	8.100	8.400	.	.
1991 MAY	7.900	8.000	7.800	8.600	8.100	8.000
1991 JUN	8.200	8.200	7.800	8.200	8.000	8.200
1991 JUL	8.500	8.500	8.200	8.400	.	.
1991 AUG	8.300	8.400	.	.	8.400	8.300
1991 SEP	8.350	8.550	8.600	8.600	8.900	8.800
1991 OCT	8.500	8.600	8.500	8.300	8.400	8.200
1991 NOV	8.550	8.750	8.650	9.000	8.700	8.700
1992 JAN	8.600	8.750	8.700	8.850	.	.
1992 APR	8.350	8.300	8.050	7.990	.	.
1992 JUL	8.330	8.290	8.320	8.390	.	.
1992 OCT	8.340	8.380	8.410	8.380	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
SODIUM (MG/L)			DET'N LIMIT = 0.20		GUIDELINE = 200 (A4)	
1991 JAN	11.000	10.900	11.000	10.800	10.900	11.600
1991 FEB	11.400	11.600	.	.	11.300	11.400
1991 MAR	11.400	11.200	11.000	11.200	11.400	10.800
1991 APR	10.800	10.800	10.600	10.800	.	.
1991 MAY	10.800	10.800	11.000	11.200	10.800	10.600
1991 JUN	11.000	10.800	11.000	10.800	11.200	11.000
1991 JUL	11.800	11.400	11.200	11.400	.	.
1991 AUG	12.000	11.800	.	.	11.600	11.000
1991 SEP	12.100	12.100	12.400	12.400	12.600	12.400
1991 OCT	12.000	11.800	11.000	11.400	12.200	11.600
1991 NOV	11.800	12.100	11.600	11.700	12.000	12.100
1992 JAN	12.500	12.500	12.200	12.000	.	.
1992 APR	11.570	11.670	11.690	11.580	.	.
1992 JUL	11.630	11.490	11.580	11.640	.	.
1992 OCT	11.660	11.710	11.640	11.700	.	.
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = 0.05 (F2)	
1991 JAN	.004 <T	BDL	BDL	BDL	BDL	BDL
1991 FEB	BDL	.002 <T	.	.	.002 <T	.006 <T
1991 MAR	BDL	BDL	BDL	BDL	.006 <T	.004 <T
1991 APR	.012	.004 <T	.006 <T	.004 <T	.	.
1991 MAY	BDL	.018	BDL	.006 <T	BDL	BDL
1991 JUN	.024	.006 <T	.002 <T	BDL	BDL	BDL
1991 JUL	.022	.010	.008 <T	.002 <T	.	.
1991 AUG	.014	BDL	.	.	.006 <T	.002 <T
1991 SEP	.010	BDL	.002 <T	.004 <T	.004 <T	.004 <T
1991 OCT	.002 <T	BDL	.002 <T	BDL	BDL	BDL
1991 NOV	.004 <T	BDL	BDL	.002 <T	.002 <T	.002 <T
1992 JAN	.012	.002 <T	.004 <T	.002 <T	.	.
1992 APR	.016	BDL	BDL	BDL	.	.
1992 JUL	.012	.002 <T	.002 <T	BDL	.	.
1992 OCT	.024	.002 <T	.004 <T	.004 <T	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.0 (A1)	
1991 JAN	.001 <T	.001 <T	.001 <T	.001 <T	.001 <T	.001 <T
1991 FEB	.001 <T	.001 <T	.	.	.001 <T	.001 <T
1991 MAR	.001 <T	BDL	BDL	BDL	BDL	BDL
1991 APR	.002 <T	BDL	BDL	BDL	.	.
1991 MAY	.002 <T	BDL	BDL	BDL	BDL	BDL
1991 JUN	.004 <T	BDL	BDL	.001 <T	.001 <T	.001 <T
1991 JUL	.004 <T	BDL	.001 <T	.001 <T	.	.
1991 AUG	.004 <T	BDL	.	.	.001 <T	.002 <T
1991 SEP	.010	BDL	.001 <T	.001 <T	.001 <T	.001 <T
1991 OCT	.004 <T	.001 <T	BDL	BDL	.001 <T	.001 <T
1991 NOV	.002 <T	BDL	.001 <T	BDL	.001 <T	BDL
1992 JAN	.003 <T	.002 <T	.002 <T	.002 <T	.	.
1992 APR	.003 <T	.001 <T	BDL	BDL	.	.
1992 JUL	.010	.001 <T	.002 <T	.002 <T	.	.
1992 OCT	.007	.001 <T	.002 <T	.002 <T	.	.
NITRATE (TOTAL) (MG/L)			DET'N LIMIT = 0.005		GUIDELINE = 10.0 (A1)	
1991 JAN	.300	.295	.290	.295	.285	.290
1991 FEB	.310	.315	.	.	.310	.305
1991 MAR	.315	.320	.310	.320	.325	.320
1991 APR	.320	.310	.325	.315	.	.
1991 MAY	.280	.325	.300	.315	.260	.325
1991 JUN	.235	.240	.235	.240	.240	.240
1991 JUL	.175	.180	.180	.175	.	.
1991 AUG	.110	.110	.	.	.095	.100
1991 SEP	.135	.130	.135	.135	.130	.140
1991 OCT	.140	.150	.145	.140	.145	.135
1991 NOV	.190	.180	.190	.190	.180	.175
1992 JAN	.310	.285	.285	.275	.	.
1992 APR	.315	.315	.320	.310	.	.
1992 JUL	.240	.210	.205	.265	.	.
1992 OCT	.170	.175	.165	.170	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = 0.02		GUIDELINE = N/A	
1991 JAN	.210	.160	.190	.180	.180	.210
1991 FEB	.230	.190	.	.	.190	.200
1991 MAR	.220	.200	.230	.230	.320	.200
1991 APR	.250	.200	.220	.230	.	.
1991 MAY	.240	.160	.170	.200	.190	.200
1991 JUN	.260	.200	.240	.280	.200	.260
1991 JUL	.250	.230	.180	.190	.	.
1991 AUG	.210	.160	.	.	.190	.240
1991 SEP	.200	.200	.270	.230	.200	.210
1991 OCT	.240	.200	.230	.220	.230	.230
1991 NOV	.180	.150	.200	.200	.200	.200
1992 JAN	.230	.190	.180	.190	.	.
1992 APR	.270	.210	.230	.230	.	.
1992 JUL	.210	.190	.190	.200	.	.
1992 OCT	.270	.250	.230	.210	.	.
PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5 (A4)	
1991 JAN	8.270	8.030	8.060	8.030	8.120	8.100
1991 FEB	8.230	8.090	.	.	8.040	8.050
1991 MAR	8.320	8.290	8.320	8.290	8.270	8.280
1991 APR	8.250	8.030	8.090	8.060	.	.
1991 MAY	8.320	8.160	8.250	8.150	8.180	8.200
1991 JUN	8.340	8.200	8.180	8.090	8.250	8.270
1991 JUL	8.270	8.250	8.200	8.180	.	.
1991 AUG	8.320	8.150	.	.	8.020	8.010
1991 SEP	8.260	8.220	8.280	8.280	8.270	8.250
1991 OCT	8.300	8.150	8.100	8.120	8.180	8.140
1991 NOV	8.040	7.980	8.060	8.050	7.930	7.920
1992 JAN	8.340	8.280	8.320	8.280	.	.
1992 APR	8.280	8.190	8.240	8.210	.	.
1992 JUL	8.410	8.220	8.220	8.280	.	.
1992 OCT	8.280	8.170	8.060	8.100	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
PHOSPHORUS FIL REACT (MG/L)			**DET'N LIMIT = 0.0005**		**GUIDELINE = N/A**	
1991 JAN	BDL	.002	.	.	.	.
1991 FEB	.000 <T	.006	.	.	.	.
1991 MAR	BDL	.004	.	.	.	.
1991 APR	.000 <T	.006	.	.	.	.
1991 MAY	.000 <T	.010	.	.	.	.
1991 JUN	.000 <T	.006	.	.	.	.
1991 JUL	.000 <T	.006	.	.	.	.
1991 AUG	BDL	.006	.	.	.	.
1991 SEP	.000 <T	.004	.	.	.	.
1991 OCT	BDL	.003	.	.	.	.
1991 NOV	.000 <T	.002	.	.	.	.
1992 JAN	BDL	.000 <T	.	.	.	.
1992 APR	BDL	BDL	.	.	.	.
1992 JUL	.002 <T	.006	.	.	.	.
1992 OCT	BDL	BDL	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			**DET'N LIMIT = 0.002**		**GUIDELINE = 0.40 (F2)**	
1991 JAN	.007 <T	.011	.	.	.	.
1991 FEB	.009 <T	.013	.	.	.	.
1991 MAR	.005 <T	.007 <T	.	.	.	.
1991 APR	.005 <T	.007 <T	.	.	.	.
1991 MAY	.008 <T	.012	.	.	.	.
1991 JUN	.010	.010	.	.	.	.
1991 JUL	.010	.011	.	.	.	.
1991 AUG	.006 <T	.010	.	.	.	.
1991 SEP	.009 <T	.010	.	.	.	.
1991 OCT	.006 <T	.009 <T	.	.	.	.
1991 NOV	.006 <T	.003 <T	.	.	.	.
1992 JAN	.007 <T	.006 <T	.	.	.	.
1992 APR	.007 <T	.004 <T	.	.	.	.
1992 JUL	.009 <T	.011	.	.	.	.
1992 OCT	.036	.019	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHEMISTRY (LABORATORY)						
RESIDUE FILTRATE (MG/L)			DET'N LIMIT = N/A		GUIDELINE = 500 (A3)	
1991 JAN	203.000 CRO	205.000 CRO	205.000 CRO	205.000 CRO	205.000 CRO	206.000 CRO
1991 FEB	203.000 CRO	205.000 CRO	.	.	205.000 CRO	206.000 CRO
1991 MAR	203.000 CRO	205.000 CRO	205.000 CRO	200.000 CRO	205.000 CRO	205.000 CRO
1991 APR	201.000 CRO	201.000 CRO	200.000 CRO	201.000 CRO	.	.
1991 MAY	190.000 CRO	192.000 CRO	192.000 CRO	192.000 CRO	193.000 CRO	194.000 CRO
1991 JUN	203.000 CRO	204.000 CRO	205.000 CRO	205.000 CRO	205.000 CRO	205.000 CRO
1991 JUL	198.000 CRO	200.000 CRO	198.000 CRO	197.000 CRO	.	.
1991 AUG	193.000 CRO	194.000 CRO	.	.	196.000 CRO	196.000 CRO
1991 SEP	200.000 CRO	201.000 CRO	200.000 CRO	200.000 CRO	200.000 CRO	200.000 CRO
1991 OCT	200.000 CRO	202.000 CRO	203.000 CRO	202.000 CRO	202.000 CRO	202.000 CRO
1991 NOV	200.000 CRO	201.000 CRO	202.000 CRO	201.000 CRO	202.000 CRO	202.000 CRO
1992 JAN	207.000 CRO	208.000 CRO	209.000 CRO	209.000 CRO	.	.
1992 APR	198.000 CRO	199.000 CRO	199.000 CRO	200.000 CRO	.	.
1992 JUL	202.000 CRO	203.000 CRO	203.000 CRO	202.000 CRO	.	.
1992 OCT	197.000 CRO	199.000 CRO	199.000 CRO	199.000 CRO	.	.
SULPHATE (MG/L)			DET'N LIMIT = 0.20		GUIDELINE = 500 (A3)	
1991 JAN	26.180	27.840	27.170	27.300	28.500	27.550
1991 FEB	26.210	27.000	.	.	27.070	27.110
1991 MAR	25.160	26.500	25.860	26.340	25.680	25.480
1991 APR	25.250	26.740	26.520	26.580	.	.
1991 MAY	24.490	25.360	25.790	26.130	25.590	25.300
1991 JUN	25.060	26.210	25.700	25.640	25.320	25.520
1991 JUL	26.840	27.710	27.210	26.830	.	.
1991 AUG	26.800	27.510	.	.	26.910	27.210
1991 SEP	27.030	28.310	27.150	26.880	26.850	27.130
1991 OCT	28.120	28.660	28.390	28.200	28.330	28.120
1991 NOV	24.320	26.390	25.670	25.500	28.210	23.440
1992 JAN	27.710	27.860	27.370	27.990	.	.
1992 APR	26.500	26.550	26.140	26.160	.	.
1992 JUL	26.010	26.870	26.190	26.650	.	.
1992 OCT	26.460	27.270	27.360	27.600	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
	CHEMISTRY (LABORATORY)					
TURBIDITY (FTU)			DET'N LIMIT = 0.05		GUIDELINE = 1.0 (A1)	
1991 JAN	1.100	.390	.620	.830	.540	.960
1991 FEB	.930	.370	.	.	.450	.420
1991 MAR	.790	.320	.490	.470	.580	.650
1991 APR	1.460	.240 <T	.710	.830	.	.
1991 MAY	1.690	.570	.560	.620	.400	.500
1991 JUN	1.400	.310	.400	.300	.320	.310
1991 JUL	.750	.380	.690	.600	.	.
1991 AUG	1.200	.390	.	.	.860	.700
1991 SEP	.800	.250	.460	.480	.520	.480
1991 OCT	.560	.330	.350	.500	.580	.590
1991 NOV	1.050	.430	.370	.330	.310	.900
1992 JAN	1.310	.520	.440	.480	.	.
1992 APR	1.470	.700	.670	.730	.	.
1992 JUL	1.390	.440	.430	.470	.	.
1992 OCT	1.010	.480	.580	.560	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
SILVER (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = N/A	
74 SAMPLES	BDL	BDL	BDL	BDL	BDL	BDL
ALUMINUM (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 100 (A4)	
1991 JAN	12.000	160.000	160.000	170.000	120.000	120.000
1991 FEB	7.600	170.000	.	.	130.000	130.000
1991 MAR	14.000	170.000	150.000	160.000	140.000	140.000
1991 APR	20.000	220.000	180.000	160.000	.	.
1991 MAY	16.000	260.000	240.000	190.000	180.000	180.000
1991 JUN	17.000	150.000	160.000	120.000	130.000	120.000
1991 JUL	13.000	170.000	180.000	170.000	.	.
1991 AUG	9.400	110.000	.	.	130.000	120.000
1991 SEP	10.000	98.000	110.000	110.000	110.000	110.000
1991 OCT	9.400	98.000	89.000	93.000	94.000	93.000
1991 NOV	11.000	53.000	56.000	56.000	63.000	64.000
1992 JAN	11.000	78.000	83.000	67.000	.	.
1992 APR	13.000	53.000	54.000	55.000	.	.
1992 JUL	13.000	52.000	110.000	110.000	.	.
1992 OCT	11.000	190.000	120.000	120.000	.	.
ARSENIC (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 25 (A1)	
1991 JAN	.940 <T	1.100	1.100	1.100	1.100	.920 <T
1991 FEB	1.000 <T	1.600	.	.	1.300	1.200
1991 MAR	1.100	1.400	1.200	1.400	.980 <T	1.000 <T
1991 APR	.730 <T	1.200	.900 <T	.680 <T	.	.
1991 MAY	.310 <T	.740 <T	.590 <T	.410 <T	.590 <T	.510 <T
1991 JUN	1.100	1.200	1.200	1.100	1.300	1.100
1991 JUL	.890 <T	1.200	1.400	1.300	.	.
1991 AUG	1.100	1.400	.	.	1.600	1.300
1991 SEP	.990 <T	1.500	1.100	1.000 <T	.840 <T	.790 <T
1991 OCT	.720 <T	1.300	1.200	1.200	1.100	1.200
1991 NOV	1.100	1.500	1.200	1.300	1.100	1.300
1992 JAN	.790 <T	.880 <T	.810 <T	.950 <T	.	.
1992 APR	.570 <T	1.200	1.500	1.600	.	.
1992 JUL	.680 <T	1.500	1.500	1.700	.	.
1992 OCT	1.000 <T	1.500	.930 <T	1.500	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
BARIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 1000 (A2)	
1991 JAN	23.000	22.000	21.000	21.000	22.000	22.000
1991 FEB	22.000	22.000	.	.	22.000	23.000
1991 MAR	22.000	21.000	20.000	20.000	22.000	22.000
1991 APR	23.000	23.000	24.000	25.000	.	.
1991 MAY	23.000	23.000	23.000	23.000	23.000	23.000
1991 JUN	23.000	23.000	23.000	23.000	22.000	22.000
1991 JUL	23.000	23.000	22.000	22.000	.	.
1991 AUG	21.000	22.000	.	.	22.000	22.000
1991 SEP	20.000	20.000	23.000	23.000	23.000	23.000
1991 OCT	22.000	22.000	22.000	22.000	22.000	22.000
1991 NOV	23.000	22.000	21.000	21.000	21.000	21.000
1992 JAN	23.000	23.000	23.000	23.000	.	.
1992 APR	21.000	20.000	25.000	26.000	.	.
1992 JUL	19.000	21.000	21.000	21.000	.	.
1992 OCT	23.000	23.000	24.000	24.000	.	.
BORON (UG/L)			DET'N LIMIT = 2.00		GUIDELINE = 5000 (A1)	
1991 JAN	30.000	26.000	26.000	25.000	29.000	30.000
1991 FEB	22.000	23.000	.	.	20.000 <T	23.000
1991 MAR	24.000	23.000	19.000 <T	23.000	24.000	21.000
1991 APR	21.000	21.000	21.000	21.000	.	.
1991 MAY	22.000	22.000	21.000	21.000	22.000	22.000
1991 JUN	24.000	22.000	21.000	20.000 <T	24.000	21.000
1991 JUL	23.000	25.000	25.000	25.000	.	.
1991 AUG	28.000	22.000	.	.	22.000	21.000
1991 SEP	46.000	45.000	24.000	23.000	24.000	23.000
1991 OCT	22.000	28.000	29.000	30.000	28.000	25.000
1991 NOV	24.000	26.000	23.000	29.000	22.000	29.000
1992 JAN	25.000	26.000	24.000	24.000	.	.
1992 APR	27.000	28.000	27.000	26.000	.	.
1992 JUL	22.000	21.000	22.000	23.000	.	.
1992 OCT	30.000	29.000	28.000	29.000	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
BERYLLIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 6800 (D4)	
1991 JAN	BDL	BDL	BDL	BDL	BDL	BDL
1991 FEB	BDL	BDL	.	.	BDL	BDL
1991 MAR	BDL	BDL	BDL	BDL	BDL	BDL
1991 APR	BDL	BDL	BDL	BDL	.	.
1991 MAY	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUN	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUL	BDL	BDL	BDL	BDL	.	.
1991 AUG	BDL	BDL	.	.	BDL	BDL
1991 SEP	BDL	BDL	BDL	BDL	BDL	BDL
1991 OCT	BDL	BDL	BDL	BDL	BDL	BDL
1991 NOV	BDL	BDL	BDL	BDL	BDL	.060 <T
1992 JAN	BDL	BDL	BDL	BDL	.	.
1992 APR	BDL	BDL	BDL	BDL	.	.
1992 JUL	BDL	BDL	BDL	BDL	.	.
1992 OCT	BDL	BDL	BDL	BDL	.	.
CADMIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 5.0 (A1)	
1991 JAN	BDL	BDL	BDL	BDL	BDL	BDL
1991 FEB	BDL	BDL	.	.	BDL	BDL
1991 MAR	BDL	.080 <T	.060 <T	BDL	BDL	BDL
1991 APR	BDL	BDL	BDL	BDL	.	.
1991 MAY	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUN	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUL	BDL	BDL	BDL	BDL	.	.
1991 AUG	BDL	BDL	.	.	BDL	BDL
1991 SEP	BDL	BDL	BDL	BDL	BDL	BDL
1991 OCT	BDL	BDL	BDL	BDL	BDL	BDL
1991 NOV	BDL	BDL	BDL	BDL	BDL	BDL
1992 JAN	BDL	BDL	BDL	BDL	.	.
1992 APR	BDL	BDL	BDL	.060 <T	.	.
1992 JUL	BDL	BDL	BDL	BDL	.	.
1992 OCT	.110 <T	.060 <T	.140 <T	.120 <T	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
COBALT (UG/L)			DET'N LIMIT = 0.02		GUIDELINE = N/A	
1991 JAN	.050 <T	.070 <T	.050 <T	BDL	.030 <T	BDL
1991 FEB	.180 <T	.220 <T	.	.	.200 <T	.170 <T
1991 MAR	BDL	BDL	BDL	BDL	.150 <T	.080 <T
1991 APR	.150 <T	.170 <T	BDL	BDL	.	.
1991 MAY	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUN	.110 <T	.040 <T	.070 <T	.060 <T	.080 <T	.100 <T
1991 JUL	.800 <T	.750 <T	.700 <T	.720 <T	.	.
1991 AUG	.100 <T	.100 <T	.	.	.090 <T	.080 <T
1991 SEP	.090 <T	.080 <T	.120 <T	.080 <T	.130 <T	.100 <T
1991 OCT	.090 <T	.120 <T	.050 <T	BDL	.130 <T	.150 <T
1991 NOV	.060 <T	.070 <T	.040 <T	.070 <T	.100 <T	.060 <T
1992 JAN	.110 <T	.150 <T	.070 <T	.070 <T	.	.
1992 APR	.190 <T	.160 <T	.130 <T	.210 <T	.	.
1992 JUL	.180 <T	.160 <T	.190 <T	.260 <T	.	.
1992 OCT	.270 <T	.350 <T	.360 <T	.280 <T	.	.
CHROMIUM (UG/L)			DET'N LIMIT = 0.50		GUIDELINE = 50.0 (A1)	
1991 JAN	3.200 <T	2.200 <T	1.800 <T	1.600 <T	2.800 <T	2.900 <T
1991 FEB	1.000 <T	1.300 <T	.	.	.570 <T	1.100 <T
1991 MAR	2.000 <T	2.200 <T	.570 <T	2.100 <T	2.100 <T	1.000 <T
1991 APR	.840 <T	BDL	BDL	BDL	.	.
1991 MAY	1.600 <T	1.600 <T	BDL	BDL	1.300 <T	.990 <T
1991 JUN	2.400 <T	.640 <T	.530 <T	BDL	2.300 <T	BDL
1991 JUL	.850 <T	1.800 <T	2.600 <T	2.800 <T	.	.
1991 AUG	2.300 <T	.640 <T	.	.	.590 <T	.640 <T
1991 SEP	5.400	5.200	BDL	BDL	.560 <T	.520 <T
1991 OCT.	BDL	2.000 <T	2.300 <T	2.100 <T	2.100 <T	1.100 <T
1991 NOV	1.200 <T	2.100 <T	.560 <T	2.300 <T	.520 <T	2.300 <T
1992 JAN	.510 <T	.720 <T	.550 <T	BDL	.	.
1992 APR	1.400 <T	1.300 <T	.750 <T	.800 <T	.	.
1992 JUL	BDL	BDL	BDL	BDL	.	.
1992 OCT	3.500 <T	3.600 <T	1.900 <T	3.200 <T	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
COPPER (UG/L)			DET'N LIMIT = 0.50		GUIDELINE = 1000 (A3)	
1991 JAN	1.500 <T	1.200 <T	1.900 <T	5.300	8.400	57.000
1991 FEB	13.000	1.300 <T	.	.	8.700	80.000
1991 MAR	15.000	1.200 <T	1.600 <T	2.100 <T	7.400	47.000
1991 APR	2.600 <T	1.200 <T	1.700 <T	3.900 <T	.	.
1991 MAY	1.600 <T	.750 <T	1.800 <T	5.200	12.000	45.000
1991 JUN	3.000 <T	1.300 <T	2.500 <T	4.600 <T	8.000	22.000
1991 JUL	3.200 <T	1.400 <T	3.000 <T	5.400	.	.
1991 AUG	2.700 <T	1.200 <T	.	.	6.500	31.000
1991 SEP	2.200 <T	1.200 <T	3.200 <T	9.000	8.300	27.000
1991 OCT	1.700 <T	1.500 <T	2.600 <T	5.600	29.000	32.000
1991 NOV	2.400 <T	1.300 <T	3.500 <T	4.700 <T	22.000	23.000
1992 JAN	1.400 <T	1.400 <T	2.800 <T	4.200 <T	.	.
1992 APR	2.000 <T	1.500 <T	3.000 <T	4.400 <T	.	.
1992 JUL	2.600 <T	1.200 <T	2.800 <T	5.600	.	.
1992 OCT	3.300 <T	1.700 <T	2.700 <T	7.600	.	.
IRON (UG/L)			DET'N LIMIT = 6.00		GUIDELINE = 300 (A3)	
1991 JAN	17.000 <T	7.200 <T	14.000 <T	16.000 <T	50.000 <T	44.000 <T
1991 FEB	10.000 <T	6.200 <T	.	.	42.000 <T	37.000 <T
1991 MAR	12.000 <T	6.700 <T	9.000 <T	19.000 <T	35.000 <T	29.000 <T
1991 APR	240.000	BDL	64.000	36.000 <T	.	.
1991 MAY	24.000 <T	BDL	37.000 <T	46.000 <T	16.000 <T	27.000 <T
1991 JUN	22.000 <T	BDL	14.000 <T	28.000 <T	26.000 <T	32.000 <T
1991 JUL	20.000 <T	8.800 <T	45.000 <T	69.000	.	.
1991 AUG	16.000 <T	BDL	.	.	36.000 <T	35.000 <T
1991 SEP	19.000 <T	7.900 <T	6.700 <T	62.000	47.000 <T	48.000 <T
1991 OCT	12.000 <T	BDL	8.100 <T	66.000	46.000 <T	46.000 <T
1991 NOV	12.000 <T	BDL	8.500 <T	7.900 <T	38.000 <T	39.000 <T
1992 JAN	16.000 <T	10.000 <T	18.000 <T	37.000 <T	.	.
1992 APR	19.000 <T	8.000 <T	22.000 <T	26.000 <T	.	.
1992 JUL	18.000 <T	9.400 <T	79.000	67.000	.	.
1992 OCT	30.000 <T	19.000 <T	67.000	50.000 <T	.	.
MERCURY (UG/L)			DET'N LIMIT = 0.02		GUIDELINE = 1.0 (A1)	
30 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
MANGANESE (UG/L METALS)			DET'N LIMIT = 0.05		GUIDELINE = 50.0 (A3)	
1991 JAN	2.100	1.300	1.700	1.500	2.800	3.000
1991 FEB	1.600	1.100	.	.	3.000	3.300
1991 MAR	1.600	1.200	1.400	1.500	2.900	2.900
1991 APR	5.000	1.600	6.200	5.100	.	.
1991 MAY	3.600	1.200	3.200	5.600	2.100	2.600
1991 JUN	4.300	2.300	4.100	7.200	4.500	4.500
1991 JUL	3.300	1.600	7.300	9.800	.	.
1991 AUG	3.400	1.400	.	.	3.500	3.500
1991 SEP	3.100	1.400	3.300	7.900	4.100	4.300
1991 OCT	2.200	1.000	2.600	6.800	3.300	3.300
1991 NOV	2.100	1.100	2.200	2.200	2.600	2.700
1992 JAN	2.200	1.200	2.200	3.900	.	.
1992 APR	2.200	1.500	3.000	2.800	.	.
1992 JUL	4.100	2.300	11.000	10.000	.	.
1992 OCT	2.400	1.100	6.400	5.300	.	.
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = N/A	
1991 JAN	1.000	1.100	1.100	1.100	1.100	1.100
1991 FEB	1.100	1.200	.	.	1.100	1.000
1991 MAR	.960	1.100	1.000	.930	1.100	.990
1991 APR	1.100	1.100	1.100	1.000	.	.
1991 MAY	.940	.970	.970	.910	.860	.830
1991 JUN	1.000	1.000	1.100	1.100	1.000	1.000
1991 JUL	1.100	1.300	1.200	1.100	.	.
1991 AUG	1.000	1.100	.	.	1.100	1.100
1991 SEP	1.100	1.100	1.200	1.200	1.200	1.200
1991 OCT	1.200	1.200	1.200	1.100	1.200	1.200
1991 NOV	1.100	1.300	1.100	1.200	1.100	1.200
1992 JAN	1.200	1.200	1.400	1.200	.	.
1992 APR	1.100	1.100	1.200	1.300	.	.
1992 JUL	1.100	1.100	1.100	1.100	.	.
1992 OCT	1.200	1.200	1.200	1.200	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
NICKEL (UG/L)			DET'N LIMIT = 0.20		GUIDELINE = 350 (D3)	
1991 JAN	.450 <T	.620 <T	.500 <T	.580 <T	.740 <T	.940 <T
1991 FEB	.930 <T	.780 <T	.	.	.830 <T	1.300 <T
1991 MAR	.520 <T	.590 <T	.280 <T	.420 <T	.540 <T	.860 <T
1991 APR	1.100 <T	.790 <T	.570 <T	.580 <T	.	.
1991 MAY	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUN	.730 <T	.340 <T	BDL	.500 <T	.780 <T	.770 <T
1991 JUL	2.200	2.400	1.800 <T	2.200	.	.
1991 AUG	.690 <T	.580 <T	.	.	.300 <T	1.000 <T
1991 SEP	.290 <T	.290 <T	BDL	.340 <T	BDL	.450 <T
1991 OCT	.510 <T	.730 <T	.830 <T	.660 <T	1.100 <T	.860 <T
1991 NOV	BDL	BDL	BDL	BDL	1.000 <T	.700 <T
1992 JAN	.530 <T	.850 <T	.630 <T	.650 <T	.	.
1992 APR	2.100	2.300	2.600	2.800	.	.
1992 JUL	1.100 <T	1.200 <T	1.200 <T	1.500 <T	.	.
1992 OCT	1.300 <T	1.800 <T	2.000 <T	1.500 <T	.	.
LEAD (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 10 (A1)	
1991 JAN	.090 <T	BDL	.640	.210 <T	.150 <T	.990
1991 FEB	.110 <T	BDL	.	.	.170 <T	.980
1991 MAR	.090 <T	BDL	.070 <T	.080 <T	.190 <T	.690
1991 APR	.310 <T	.100 <T	.110 <T	.260 <T	.	.
1991 MAY	.340 <T	.110 <T	.130 <T	.390 <T	.330 <T	.770
1991 JUN	.670	.220 <T	.370 <T	.700	.360 <T	.660
1991 JUL	.560	.190 <T	.470 <T	.830	.	.
1991 AUG	.410 <T	.150 <T	.	.	.360 <T	1.100
1991 SEP	.510	.170 <T	.420 <T	.980	.770	1.800
1991 OCT	.220 <T	.200 <T	.250 <T	.570	1.800	2.000
1991 NOV	.280 <T	.160 <T	.260 <T	.430 <T	1.100	1.100
1992 JAN	.170 <T	.240 <T	.230 <T	.300 <T	.	.
1992 APR	.190 <T	.170 <T	.220 <T	.360 <T	.	.
1992 JUL	.420 <T	.110 <T	1.500	.500 <T	.	.
1992 OCT	.510	.270 <T	.310 <T	1.100	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
ANTIMONY (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 146 (D4)	
1991 JAN	.580	.650	.640	.630	.840	.710
1991 FEB	.590	.490 <T	.	.	.620	.630
1991 MAR	.600	.660	.560	.380 <T	.900	.800
1991 APR	.760	.750	.820	.760	.	.
1991 MAY	.690	.570	.460 <T	.630	.740	.810
1991 JUN	.670	.560	.580	.510	.760	.660
1991 JUL	.810	.590	.770	.720	.	.
1991 AUG	.700	.680	.	.	.810	.930
1991 SEP	.560	.500 <T	.420 <T	.610	.740	.600
1991 OCT	.820	.670	.540	.780	.920	.850
1991 NOV	.900	.660	.550	.570	.780	.890
1992 JAN	.750	.540	.520	.570	.	.
1992 APR	.550	.520	.490 <T	.610	.	.
1992 JUL	.400 <T	.420 <T	.560	.570	.	.
1992 OCT	.840	.660	.670	.710	.	.
SELENIUM (UG/L)			DET'N LIMIT = 1.00		GUIDELINE = 10 (A1)	
1991 JAN	BDL	BDL	BDL	BDL	BDL	1.300 <T
1991 FEB	BDL	BDL	.	.	1.200 <T	BDL
1991 MAR	BDL	BDL	1.100 <T	BDL	BDL	2.300 <T
1991 APR	BDL	BDL	BDL	BDL	.	.
1991 MAY	BDL	BDL	BDL	BDL	BDL	BDL
1991 JUN	BDL	BDL	BDL	BDL	1.200 <T	BDL
1991 JUL	BDL	2.100 <T	1.800 <T	1.800 <T	.	.
1991 AUG	BDL	BDL	.	.	BDL	BDL
1991 SEP	BDL	1.500 <T	BDL	1.500 <T	1.400 <T	1.400 <T
1991 OCT	BDL	1.500 <T	1.400 <T	1.100 <T	1.300 <T	1.300 <T
1991 NOV	BDL	BDL	BDL	BDL	BDL	1.200 <T
1992 JAN	BDL	1.300 <T	1.500 <T	1.400 <T	.	.
1992 APR	BDL	BDL	BDL	BDL	.	.
1992 JUL	BDL	BDL	BDL	BDL	.	.
1992 OCT	1.100 <T	1.800 <T	1.400 <T	4.200 <T	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
STRONTIUM (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = N/A	
1991 JAN	180.000	190.000	180.000	180.000	180.000	190.000
1991 FEB	180.000	180.000	.	.	180.000	180.000
1991 MAR	180.000	180.000	170.000	180.000	170.000	160.000
1991 APR	180.000	180.000	180.000	170.000	.	.
1991 MAY	180.000	180.000	180.000	180.000	180.000	180.000
1991 JUN	180.000	180.000	180.000	170.000	180.000	170.000
1991 JUL	180.000	180.000	180.000	170.000	.	.
1991 AUG	170.000	170.000	.	.	170.000	170.000
1991 SEP	160.000	170.000	180.000	180.000	180.000	170.000
1991 OCT	180.000	180.000	180.000	180.000	180.000	180.000
1991 NOV	180.000	180.000	170.000	180.000	170.000	170.000
1992 JAN	190.000	190.000	190.000	190.000	.	.
1992 APR	160.000	160.000	210.000	210.000	.	.
1992 JUL	160.000	170.000	170.000	170.000	.	.
1992 OCT	170.000	180.000	180.000	180.000	.	.
TITANIUM (UG/L)			DET'N LIMIT = 0.50		GUIDELINE = N/A	
1991 JAN	2.500 <T	3.000 <T	3.000 <T	3.400 <T	3.000 <T	2.900 <T
1991 FEB	1.600 <T	2.700 <T	.	.	2.400 <T	2.400 <T
1991 MAR	2.100 <T	3.000 <T	2.800 <T	3.400 <T	3.200 <T	3.600 <T
1991 APR	3.500 <T	3.600 <T	3.700 <T	3.800 <T	.	.
1991 MAY	1.600 <T	2.200 <T	1.900 <T	1.600 <T	1.700 <T	1.700 <T
1991 JUN	2.000 <T	2.600 <T	2.100 <T	1.800 <T	2.100 <T	2.200 <T
1991 JUL	2.800 <T	3.800 <T	4.700 <T	4.200 <T	.	.
1991 AUG	2.000 <T	2.600 <T	.	.	2.500 <T	2.200 <T
1991 SEP	1.300 <T	1.100 <T	1.500 <T	1.600 <T	1.800 <T	1.500 <T
1991 OCT	1.200 <T	1.800 <T	2.200 <T	1.600 <T	2.100 <T	1.800 <T
1991 NOV	1.500 <T	1.800 <T	1.700 <T	1.900 <T	1.600 <T	1.700 <T
1992 JAN	1.100 <T	1.200 <T	1.100 <T	1.400 <T	.	.
1992 APR	4.300 <T	4.400 <T	6.000	6.300	.	.
1992 JUL	4.100 <T	3.900 <T	3.900 <T	4.100 <T	.	.
1992 OCT	1.800 <T	3.700 <T	2.900 <T	3.800 <T	.	.
THALLIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 13 (D4)	
74 SAMPLES	BDL	BDL	BDL	BDL	BDL	BDL

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
URANIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 100 (A1)	
1991 JAN	.310 <T	.350 <T	.370 <T	.350 <T	.320 <T	.330 <T
1991 FEB	.270 <T	.310 <T	.	.	.320 <T	.340 <T
1991 MAR	.300 <T	.320 <T	.320 <T	.270 <T	.350 <T	.310 <T
1991 APR	.320 <T	.360 <T	.350 <T	.350 <T	.	.
1991 MAY	.270 <T	.300 <T	.330 <T	.280 <T	.310 <T	.300 <T
1991 JUN	.320 <T	.330 <T	.310 <T	.330 <T	.290 <T	.320 <T
1991 JUL	.350 <T	.340 <T	.390 <T	.300 <T	.	.
1991 AUG	.300 <T	.350 <T	.	.	.300 <T	.300 <T
1991 SEP	.280 <T	.360 <T	.370 <T	.420 <T	.310 <T	.360 <T
1991 OCT	.300 <T	.350 <T	.360 <T	.320 <T	.350 <T	.350 <T
1991 NOV	.350 <T	.410 <T	.300 <T	.330 <T	.330 <T	.330 <T
1992 JAN	.340 <T	.360 <T	.390 <T	.410 <T	.	.
1992 APR	.320 <T	.350 <T	.330 <T	.350 <T	.	.
1992 JUL	.260 <T	.270 <T	.340 <T	.310 <T	.	.
1992 OCT	.370 <T	.310 <T	.340 <T	.380 <T	.	.
VANADIUM (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = N/A	
1991 JAN	.160 <T	.140 <T	.160 <T	.160 <T	.120 <T	.140 <T
1991 FEB	.090 <T	.090 <T	.	.	BDL	.100 <T
1991 MAR	.120 <T	.060 <T	.090 <T	BDL	.140 <T	.170 <T
1991 APR	.170 <T	.120 <T	.220 <T	.200 <T	.	.
1991 MAY	.090 <T	.110 <T	.120 <T	BDL	.070 <T	BDL
1991 JUN	.130 <T	.140 <T	.180 <T	.140 <T	.120 <T	.120 <T
1991 JUL	BDL	.060 <T	BDL	.080 <T	.	.
1991 AUG	.100 <T	.070 <T	.	.	.060 <T	.070 <T
1991 SEP	.130 <T	.100 <T	.060 <T	BDL	BDL	.070 <T
1991 OCT	.130 <T	.090 <T	.090 <T	.070 <T	.150 <T	.100 <T
1991 NOV	BDL	BDL	BDL	.070 <T	BDL	BDL
1992 JAN	BDL	BDL	BDL	BDL	.	.
1992 APR	BDL	BDL	.230 <T	.260 <T	.	.
1992 JUL	.250 <T	.260 <T	.240 <T	.250 <T	.	.
1992 OCT	.310 <T	.380 <T	.250 <T	.310 <T	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
METALS						
ZINC (UG/L)			DET'N LIMIT = 0.20		GUIDELINE = 5000 (A3)	
1991 JAN	1.800 <T	1.400 <T	2.000 <T	3.900	2.300	3.600
1991 FEB	2.800	2.400	.	.	2.600	4.200
1991 MAR	3.300	2.200	2.300	3.000	3.000	3.800
1991 APR	5.700	2.900	3.200	5.100	.	.
1991 MAY	BDL	BDL	.350 <T	4.600	.340 <T	7.700
1991 JUN	2.900	2.500	2.000 <T	3.200	2.900	3.300
1991 JUL	4.900	5.500	4.400	24.000	.	.
1991 AUG	2.100	1.600 <T	.	.	2.300	3.500
1991 SEP	1.900 <T	1.400 <T	2.300	5.000	2.300	5.500
1991 OCT	1.800 <T	2.100	1.200 <T	2.400	6.000	6.100
1991 NOV	3.000	2.500	2.500	4.000	7.200	7.800
1992 JAN	4.000	3.000	4.700	5.100	.	.
1992 APR	2.000 <T	1.900 <T	4.300	6.200	.	.
1992 JUL	2.700	1.500 <T	2.400	2.800	.	.
1992 OCT	3.700	4.400	3.500	5.400	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHLOROAROMATICS						
HEXACHLOROBUTADIENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 450 (D4)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
123-TRICHLOROBENZENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
1234-TETCLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
1235-TETCLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
124-TRICHLOROBENZENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 10000 (I)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
1245-TETCLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 38000 (D4)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
135-TRICHLOROBENZENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
HEXACHLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 10 (C1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHLOROAROMATICS						
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 1900 (D4)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	!LA	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	BDL	BDL	.	BDL	.
1991 JUN	BDL	BDL	6.000 <T	.	BDL	.
1991 JUL	!AW	!AW	!AW	.	.	.
1991 AUG	!AW	!AW	.	.	!AW	.
1991 SEP	!AW	!AW	!AW	.	!AW	.
1991 OCT	BDL	6.000 <T	2.000 <T	.	4.000 <T	.
1991 NOV	1.000 <T	2.000 <T	BDL	.	2.000 <T	.
1992 JAN	BDL	1.000 <T	1.000 <T	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
OCTACHLOROSTYRENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
PENTACHLOROBENZENE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 74000 (D4)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
236-TRICHLOROTOLUENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
245-TRICHLOROTOLUENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
26A-TRICHLOROTOLUENE (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
CHLOROPHENOLS						
234-TRICHLOROPHENOL (NG/L)		DET'N LIMIT = 100.0		GUIDELINE = N/A		
2 SAMPLES	BDL	BDL	.	.	.	.
2345-TETCHLOROPHENOL (NG/L)		DET'N LIMIT = 20.0		GUIDELINE = N/A		
2 SAMPLES	BDL	BDL	.	.	.	.
2356-TETCHLOROPHENOL (NG/L)		DET'N LIMIT = 10.0		GUIDELINE = N/A		
2 SAMPLES	BDL	BDL	.	.	.	.
245-TRICHLOROPHENOL (NG/L)		DET'N LIMIT = 100.0		GUIDELINE = 2600000 (D4)		
2 SAMPLES	BDL	BDL	.	.	.	.
246-TRICHLOROPHENOL (NG/L)		DET'N LIMIT = 20.0		GUIDELINE = 5000 (A1)		
2 SAMPLES	BDL	BDL	.	.	.	.
PENTACHLOROPHENOL (NG/L)		DET'N LIMIT = 10.00		GUIDELINE = 60000 (A1)		
2 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PESTICIDES AND PCB						
ALDRIN (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
1991 JAN	1.000 <T	BDL	2.000 <T	.	1.000 <T	.
1991 FEB	2.000 <T	2.000 <T	.	.	!LA	.
1991 MAR	BDL	2.000 <T	2.000 <T	.	2.000 <T	.
1991 APR	1.000 <T	1.000 <T	1.000 <T	.	.	.
1991 MAY	BDL	BDL	2.000 <T	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	!AW	!AW	!AW	.	.	.
1991 AUG	!AW	!AW	.	.	!AW	.
1991 SEP	!AW	!AW	!AW	.	!AW	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	1.000 <T	BDL	2.000 <T	.	1.000 <T	.
1992 JAN	1.000 <T	BDL	BDL	.	.	.
1992 APR	BDL	2.000 <T	BDL	.	.	.
1992 OCT	1.000 <T	1.000 <T	BDL	.	.	.
BETA BHC (NG/L)			DET'N LIMIT = 1.00		GUIDELINE = 300 (G)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
LINDANE (GAMMA BHC) (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	!LA	.
1991 MAR	BDL	BDL	2.000 <T	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	BDL	BDL	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	!AW	!AW	!AW	.	.	.
1991 AUG	!AW	!AW	.	.	!AW	.
1991 SEP	!AW	!AW	!AW	.	!AW	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	BDL	BDL	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
ALPHA CHLORDANE (NG/L)			DET'N LIMIT = 2.000		GUIDELINE = 7000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PESTICIDES AND PCB						
GAMMA CHLORDANE (NG/L)			DET'N LIMIT = 2.00		GUIDELINE = 7000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
DIELDRIN (NG/L)			DET'N LIMIT = 2.00		GUIDELINE = 700 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
METHOXYCHLOR (NG/L)			DET'N LIMIT = 5.0		GUIDELINE = 900000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
ENDOSULFAN 1 (NG/L)			DET'N LIMIT = 2.00		GUIDELINE = 74000 (D4)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
ENDOSULFAN II (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 74000 (D4)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
ENDRIN (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 1600 (D3)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
ENDOSULFAN SULPHATE (NG/L)			DET'N LIMIT = 5.00		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
HEPTACHLOR EPOXIDE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 3000 (A1)	
24 SAMPLES	BDL	BDL	BDL	.	BDL	.
HEPTACHLOR (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 3000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
MIREX (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
OXYCHLORDANE (NG/L)			DET'N LIMIT = 2.000		GUIDELINE = N/A	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
O,P-DDT (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 30000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PESTICIDES AND PCB						
PCB (NG/L)			DET'N LIMIT = 20.00		GUIDELINE = 3000 (A2)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
P,P-DDD (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 30000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
P,P-DDE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 30000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
P,P-DDT (NG/L)			DET'N LIMIT = 5.000		GUIDELINE = 30000 (A1)	
38 SAMPLES	BDL	BDL	BDL	.	BDL	.
TOXAPHENE (NG/L)			DET'N LIMIT = 500.0		GUIDELINE = 5000 (A1)	
28 SAMPLES	BDL	BDL	BDL	.	BDL	.
AMETRINE (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = 300000 (D3)	
17 SAMPLES	BDL	BDL	.	.	.	.
ATRAZINE (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = 60000 (A2)	
1991 JAN	210.000 <T	!IS	.	.	.	.
1991 FEB	BDL	BDL	.	.	.	.
1991 MAR	BDL	80.000 <T	.	.	.	.
1991 APR	100.000 <T	110.000 <T	.	.	.	.
1991 MAY	BDL	BDL	.	.	.	.
1991 JUN	!AW	!AW	.	.	.	.
1991 JUL	!AW	!AW	.	.	.	.
1991 AUG	!AW	!AW	.	.	.	.
1991 SEP	!AW	!AW	.	.	.	.
1991 OCT	!AW	!AW	.	.	.	.
1991 NOV	100.000 <T	100.000 <T	.	.	.	.
1992 JAN	120.000 <T	100.000 <T	.	.	.	.
1992 APR	130.000 <T	130.000 <T	.	.	.	.
1992 OCT	130.000 <T	120.000 <T	.	.	.	.
ATRATONE (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = N/A	
17 SAMPLES	BDL	BDL	.	.	.	.
CYANAZINE (BLADEX) (NG/L)			DET'N LIMIT = 100.0		GUIDELINE = 10000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PESTICIDES AND PCB						
DESETHYL ATRAZINE (NG/L)			DET'N LIMIT = 200.0		GUIDELINE = 60000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.
DESETHYL SIMAZINE (NG/L)			DET'N LIMIT = 200.0		GUIDELINE = 10000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.
PROMETONE (NG/L)			DET'N LIMIT = 50.000		GUIDELINE = 52500 (D3)	
17 SAMPLES	BDL	BDL	.	.	.	.
PROPAZINE (NG/L)			DET'N LIMIT = 50.000		GUIDELINE = 700000 (D3)	
17 SAMPLES	BDL	BDL	.	.	.	.
PROMETRYNE (NG/L)			DET'N LIMIT = 50.000		GUIDELINE = 1000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.
METRIBUZIN (SENCOR) (NG/L)			DET'N LIMIT = 100.0		GUIDELINE = 80000 (A1)	
17 SAMPLES	BDL	BDL	.	.	.	.
SIMAZINE (NG/L)			DET'N LIMIT = 50.00		GUIDELINE = 10000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.
ALACHLOR (LASSO) (NG/L)			DET'N LIMIT = 500.0		GUIDELINE = 5000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.
METOLACHLOR (NG/L)			DET'N LIMIT = 500.0		GUIDELINE = 50000 (A2)	
17 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PESTICIDES AND PCB						
HEXACLCYCLOPENTADIEN (NG/L)		DET'N LIMIT = 5.00			GUIDELINE = 206000 (D4)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	20.000 <T	.	.	!LA	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	32.000 <T	BDL	.	.	.
1991 MAY	BDL	9.000 <T	25.000 <T	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	!AW	!AW	!AW	.	.	.
1991 AUG	!AW	!AW	.	.	!AW	.
1991 SEP	!AW	!AW	!AW	.	!AW	.
1991 OCT	BDL	16.000 <T	15.000 <T	.	BDL	.
1991 NOV	BDL	20.000 <T	5.000 <T	.	BDL	.
1992 JAN	BDL	22.000 <T	34.000 <T	.	.	.
1992 APR	!QU	!QU	!QU	.	.	.
1992 OCT	!QU	!QU	!QU	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
PHENOLICS (UG/L	PHENOLICS)	DET'N LIMIT = 0.2		GUIDELINE = N/A		
1991 JAN	.600 <T	BDL	.	.	.	.
1991 FEB	BDL	BDL	.	.	.	.
1991 MAR	1.000	.600 <T	.	.	.	.
1991 APR	BDL	BDL	.	.	.	.
1991 MAY	.600 <T	.800 <T	.	.	.	.
1991 JUN	.600 <T	.600 <T	.	.	.	.
1991 JUL	BDL	BDL	.	.	.	.
1991 AUG	BDL	.600 <T	.	.	.	.
1991 SEP	1.000	.800 <T	.	.	.	.
1991 OCT	BDL	BDL	.	.	.	.
1991 NOV	.600 <T	.800 <T	.	.	.	.
1992 JAN	BDL	BDL	.	.	.	.
1992 APR	.800 <T	.400 <T	.	.	.	.
1992 JUL	BDL	BDL	.	.	.	.
1992 OCT	BDL	BDL	.	.	.	.

TABLE 4
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	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
POLYAROMATIC HYDROCARBONS						
PHENANTHRENE (NG/L)			DET'N LIMIT = 10.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
ANTHRACENE (NG/L)			DET'N LIMIT = 1.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
FLUORANTHENE (NG/L)			DET'N LIMIT = 20.0		GUIDELINE = 42000 (D4)	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
PYRENE (NG/L)			DET'N LIMIT = 20.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(A)ANTHRACENE (NG/L)			DET'N LIMIT = 20.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
CHRYSENE (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
DIMETH. BENZ(A)ANTHR (NG/L)			DET'N LIMIT = 5.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(E) PYRENE (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(B) FLUORANTHEN (NG/L)			DET'N LIMIT = 10.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
PERYLENE (NG/L)			DET'N LIMIT = 10.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(K) FLUORANTHEN (NG/L)			DET'N LIMIT = 1.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(A) PYRENE (NG/L)			DET'N LIMIT = 5.0		GUIDELINE = 10 (A1)	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
POLYAROMATIC HYDROCARBONS						
BENZO(G,H,I) PERYLEN (NG/L)			DET'N LIMIT = 20.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
DIBENZO(A,H) ANTHRAC (NG/L)			DET'N LIMIT = 10.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
INDENO(1,2,3-C,D) PY (NG/L)			DET'N LIMIT = 20.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
BENZO(B) CHRYSENE (NG/L)			DET'N LIMIT = 2.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.
CORONENE (NG/L)			DET'N LIMIT = 10.0		GUIDELINE = N/A	
21 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
SPECIFIC PESTICIDES						
TOXAPHENE (NG/L)			DET'N LIMIT = 500.0		GUIDELINE = 5000 (A1)	
10 SAMPLES	BDL	BDL	BDL	.	BDL	.
2,4,5-T (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = 280000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
2,4-D (NG/L)			DET'N LIMIT = 100.0		GUIDELINE = 100000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
2,4-DB (NG/L)			DET'N LIMIT = 200.0		GUIDELINE = N/A	
2 SAMPLES	BDL	BDL	.	.	.	.
2,4 D PROPIONIC ACID (NG/L)			DET'N LIMIT = 100.0		GUIDELINE = N/A	
2 SAMPLES	BDL	BDL	.	.	.	.
DICAMBA (NG/L)			DET'N LIMIT = 50.0		GUIDELINE = 120000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
2,4,5-TP (SILVEX) (NG/L)			DET'N LIMIT = 20.00		GUIDELINE = 10000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
CARBOFURAN (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = 90000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
CHLORPROPHAM (CIPC) (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = 350000 (G)	
2 SAMPLES	BDL	BDL	.	.	.	.
DIALLATE (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = N/A	
2 SAMPLES	BDL	BDL	.	.	.	.
EPTAM (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = N/A	
2 SAMPLES	BDL	BDL	.	.	.	.
IPC (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = N/A	
2 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
SPECIFIC PESTICIDES						
PROPOXUR (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = 140000 (D3)	
2 SAMPLES	BDL	BDL	.	.	.	.
CARBARYL (NG/L)			DET'N LIMIT = 200.0		GUIDELINE = 90000 (A1)	
2 SAMPLES	BDL	BDL	.	.	.	.
BUTYLATE (NG/L)			DET'N LIMIT = 2000.0		GUIDELINE = 245000 (D3)	
2 SAMPLES	BDL	BDL	.	.	.	.

TABLE 4
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	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
BENZENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 5 (A1)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	BDL	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	.050 <T	BDL	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	BDL	.	BDL	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	BDL	BDL	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
TOLUENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 24 (A3)	
1991 JAN	BDL	BDL	BDL	.	.050 <T	.
1991 FEB	BDL	BDL	.	.	.150 <T	.
1991 MAR	BDL	BDL	BDL	.	.100 <T	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	.150 <T	.150 <T	.	BDL	.
1991 JUN	BDL	BDL	.100 <T	.	BDL	.
1991 JUL	BDL	BDL	.050 <T	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	.050 <T	.	BDL	.
1991 OCT	BDL	BDL	.050 <T	.	.100 <T	.
1991 NOV	.050 <T	.100 <T	.050 <T	.	.150 <T	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	.050 <T	BDL	.100 <T	.	.	.
1992 JUL	BDL	.050 <T	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
ETHYLBENZENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 2.4 (A3)	
1991 JAN	BDL	.050 <T	BDL	.	.100 <T	.
1991 FEB	.050 <T	.200 <T	.	.	.150 <T	.
1991 MAR	BDL	.050 <T	BDL	.	.050 <T	.
1991 APR	BDL	.100 <T	.150 <T	.	.	.
1991 MAY	BDL	.200 <T	.250 <T	.	BDL	.
1991 JUN	BDL	.100 <T	.050 <T	.	BDL	.
1991 JUL	BDL	.200 <T	.100 <T	.	.	.
1991 AUG	BDL	.250 <T	.	.	BDL	.
1991 SEP	BDL	.050 <T	.100 <T	.	BDL	.
1991 OCT	BDL	BDL	.100 <T	.	BDL	.
1991 NOV	.100 <T	.250 <T	.150 <T	.	.150 <T	.
1992 JAN	.100 <T	.150 <T	.100 <T	.	.	.
1992 APR	.100 <T	.100 <T	.200 <T	.	.	.
1992 JUL	BDL	.150 <T	.100 <T	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
P-XYLENE (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 300 (A3*)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	BDL	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	BDL	BDL	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	.800 <T	BDL	.	BDL	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	BDL	BDL	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
M-XYLENE (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 300 (A3*)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	.200 <T	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	.200 <T	.200 <T	.	BDL	.
1991 JUN	BDL	BDL	.100 <T	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	.100 <T	.	BDL	.
1991 OCT	BDL	BDL	.100 <T	.	BDL	.
1991 NOV	BDL	BDL	.200 <T	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
O-XYLENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 300 (A3*)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	.050 <T	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	.050 <T	.100 <T	.	BDL	.
1991 JUN	BDL	BDL	.050 <T	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	.100 <T	.	BDL	.
1991 OCT	BDL	BDL	.100 <T	.	BDL	.
1991 NOV	BDL	BDL	.100 <T	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
STYRENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 100 (D1)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	.150 <T	.300 <T	.	.	.300 <T	.
1991 MAR	.100 <T	.150 <T	.150 <T	.	.100 <T	.
1991 APR	BDL	.100 <T	.250 <T	.	.	.
1991 MAY	BDL	.100 <T	.300 <T	.	BDL	.
1991 JUN	BDL	.100 <T	.100 <T	.	BDL	.
1991 JUL	BDL	.100 <T	.050 <T	.	.	.
1991 AUG	BDL	.250 <T	.	.	BDL	.
1991 SEP	BDL	.100 <T	.300 <T	.	BDL	.
1991 OCT	BDL	BDL	.150 <T	.	BDL	.
1991 NOV	.250 <T	.150 <T	.600	.	.300 <T	.
1992 JAN	.250 <T	.200 <T	.300 <T	.	.	.
1992 APR	.250 <T	.200 <T	.300 <T	.	.	.
1992 JUL	BDL	.150 <T	.150 <T	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
1,1-DICHLOROETHYLENE (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 7 (D1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
METHYLENE CHLORIDE (UG/L)			DET'N LIMIT = 0.50		GUIDELINE = 50 (A1)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	BDL	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	BDL	BDL	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	BDL	.	.500 <T	.
1991 OCT	BDL	BDL	BDL	.	.500 <T	.
1991 NOV	BDL	BDL	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
T12-DICHLOROETHYLENE (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 70 (D1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
1,1-DICHLOROETHANE (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = N/A	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
CHLOROFORM (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 350 (A1+)	
1991 JAN	BDL	11.600	6.100	.	7.700	.
1991 FEB	BDL	9.400	.	.	8.400	.
1991 MAR	BDL	12.300	8.200	.	10.600	.
1991 APR	BDL	19.400	14.400	.	.	.
1991 MAY	BDL	31.800	18.800	.	21.600	.
1991 JUN	BDL	21.500	14.100	.	19.000	.
1991 JUL	BDL	20.100	13.100	.	.	.
1991 AUG	BDL	28.800	.	.	14.700	.
1991 SEP	BDL	20.100	9.100	.	13.300	.
1991 OCT	BDL	19.500	7.000	.	12.500	.
1991 NOV	BDL	15.500	5.900	.	9.300	.
1992 JAN	BDL	10.600	4.700	.	.	.
1992 APR	BDL	12.300	8.500	.	.	.
1992 JUL	BDL	20.700	14.500	.	.	.
1992 OCT	BDL	12.700	8.900	.	.	.
111,TRICHLOROETHANE (UG/L)			DET'N LIMIT = 0.02		GUIDELINE = 200 (D1)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	BDL	.
1991 MAR	BDL	BDL	BDL	.	BDL	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	BDL	BDL	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	BDL	.	BDL	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	BDL	BDL	.060 <T	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
1,2 DICHLOROETHANE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 5 (A1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
CARBON TETRACHLORIDE (UG/L)			DET'N LIMIT = 0.20		GUIDELINE = 5 (A1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
1,2-DICHLOROPROPANE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 5 (D1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
TRICHLOROETHYLENE (UG/L)		DET'N LIMIT = 0.10			GUIDELINE = 50 (A1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = 0.05			GUIDELINE = 350 (A1+)	
1991 JAN	BDL	9.350	3.400	.	5.700	.
1991 FEB	BDL	7.600	.	.	5.700	.
1991 MAR	BDL	8.900	4.600	.	6.400	.
1991 APR	BDL	10.850	6.850	.	.	.
1991 MAY	BDL	12.650	7.750	.	9.000	.
1991 JUN	BDL	12.300	7.400	.	10.300	.
1991 JUL	BDL	12.800	8.750	.	.	.
1991 AUG	BDL	12.750	.	.	9.700	.
1991 SEP	BDL	12.700	6.700	.	9.800	.
1991 OCT	BDL	12.700	5.100	.	8.700	.
1991 NOV	BDL	10.900	4.500	.	7.200	.
1992 JAN	BDL	10.300	3.850	.	.	.
1992 APR	BDL	10.700	5.200	.	.	.
1992 JUL	BDL	17.450	13.200	.	.	.
1992 OCT	BDL	11.350	7.500	.	.	.
112-TRICHLOROETHANE (UG/L)		DET'N LIMIT = 0.05			GUIDELINE = 0.6 (D4)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = 0.10			GUIDELINE = 350 (A1+)	
1991 JAN	BDL	4.000	1.900	.	2.800	.
1991 FEB	BDL	3.600	.	.	2.800	.
1991 MAR	BDL	3.600	2.200	.	2.900	.
1991 APR	BDL	3.900	2.500	.	.	.
1991 MAY	BDL	4.800	3.500	.	4.700	.
1991 JUN	BDL	4.700	3.200	.	3.900	.
1991 JUL	BDL	6.500	4.700	.	.	.
1991 AUG	BDL	7.100	.	.	5.700	.
1991 SEP	BDL	7.400	4.600	.	6.600	.
1991 OCT	BDL	7.000	3.400	.	5.200	.
1991 NOV	BDL	5.500	2.800	.	4.000	.
1992 JAN	BDL	6.300	2.700	.	.	.
1992 APR	BDL	5.000	2.700	.	.	.
1992 JUL	BDL	10.000	7.900	.	.	.
1992 OCT	BDL	6.400	4.900	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
TETRACHLOROETHYLENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 65 (A5)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	BDL	.	.	BDL	.
1991 MAR	BDL	BDL	BDL	.	.050 <T	.
1991 APR	BDL	BDL	BDL	.	.	.
1991 MAY	BDL	.100 <T	.050 <T	.	BDL	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	BDL	BDL	.	.	.
1991 AUG	BDL	BDL	.	.	BDL	.
1991 SEP	BDL	BDL	BDL	.	BDL	.
1991 OCT	BDL	BDL	BDL	.	BDL	.
1991 NOV	BDL	BDL	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	.150 <T	.	.	.
1992 JUL	BDL	BDL	BDL	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
BROMOFORM (UG/L)			DET'N LIMIT = 0.20		GUIDELINE = 350 (A1+)	
1991 JAN	BDL	BDL	BDL	.	BDL	.
1991 FEB	BDL	.400 <T	.	.	.400 <T	.
1991 MAR	BDL	.400 <T	.200 <T	.	.200 <T	.
1991 APR	BDL	.400 <T	.200 <T	.	.	.
1991 MAY	BDL	.200 <T	.200 <T	.	.200 <T	.
1991 JUN	BDL	BDL	BDL	.	BDL	.
1991 JUL	BDL	.600 <T	.400 <T	.	.	.
1991 AUG	BDL	.800 <T	.	.	.800 <T	.
1991 SEP	BDL	BDL	.400 <T	.	.800 <T	.
1991 OCT	BDL	1.000 <T	.400 <T	.	.600 <T	.
1991 NOV	BDL	.600 <T	BDL	.	BDL	.
1992 JAN	BDL	BDL	BDL	.	.	.
1992 APR	BDL	BDL	BDL	.	.	.
1992 JUL	BDL	1.000 <T	1.000 <T	.	.	.
1992 OCT	BDL	BDL	BDL	.	.	.
1122-TETCHLOROETHANE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 0.17 (D4)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
VINYL CHLORIDE (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 2 (D1)	
9 SAMPLES	BDL	BDL	BDL	.	.	.
C12-DICHLOROETHYLENE (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 70 (D1)	
9 SAMPLES	BDL	BDL	BDL	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
VOLATILES						
CHLOROBENZENE (UG/L)			DET'N LIMIT = 0,10		GUIDELINE = 1510 (D3)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
1,4-DICHLOROBENZENE (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 5 (A1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
1,3-DICHLOROBENZENE (UG/L)			DET'N LIMIT = 0.10		GUIDELINE = 3750 (D3)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
1,2-DICHLOROBENZENE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 200 (A1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
ETHYLENE DIBROMIDE (UG/L)			DET'N LIMIT = 0.05		GUIDELINE = 50 (D1)	
52 SAMPLES	BDL	BDL	BDL	.	BDL	.
TOTL TRIHALOMETHANES (UG/L)			DET'N LIMIT = 0.50		GUIDELINE = 350 (A1)	
1991 JAN	BDL	24.950	11.400	.	16.200	.
1991 FEB	BDL	20.950	.	.	17.150	.
1991 MAR	BDL	25.200	15.300	.	20.150	.
1991 APR	BDL	34.500	23.950	.	.	.
1991 MAY	BDL	49.450	30.200	.	35.450	.
1991 JUN	BDL	38.500	24.700	.	33.200	.
1991 JUL	BDL	40.000	26.950	.	.	.
1991 AUG	BDL	49.450	.	.	30.900	.
1991 SEP	BDL	41.000	20.800	.	30.500	.
1991 OCT	BDL	40.100	15.900	.	27.000	.
1991 NOV	BDL	32.500	13.200	.	20.900	.
1992 JAN	BDL	27.200	11.250	.	.	.
1992 APR	BDL	28.000	16.400	.	.	.
1992 JUL	BDL	49.150	36.600	.	.	.
1992 OCT	BDL	30.450	21.300	.	.	.

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992 BROCKVILLE WTP

	TREATMENT PLANT RAW	TREATMENT PLANT TREATED	DIST. SYSTEM ALDERSHOT AVE FREE FLOW	DIST. SYSTEM ALDERSHOT AVE STANDING	DIST. SYSTEM PEDEN BLVD FREE FLOW	DIST. SYSTEM PEDEN BLVD STANDING
RADIONUCLIDES						
COBALT 60 (BQ/L)			DET'N LIMIT = 0.70		GUIDELINE = N/A	
6 SAMPLES	BDL	BDL	.	.	.	.
CESIUM 134 (BQ/L)			DET'N LIMIT = 0.70		GUIDELINE = N/A	
6 SAMPLES	BDL	BDL	.	.	.	.
CESIUM 137 (BQ/L)			DET'N LIMIT = 0.70		GUIDELINE = 50 (A1)	
6 SAMPLES	BDL	BDL	.	.	.	.
GROSS ALPHA COUNT (BQ/L)			DET'N LIMIT = 0.04		GUIDELINE = 0.55 (D1)	
1991 FEB	BDL	BDL	.	.	.	.
1991 SEP	BDL	BDL	.	.	.	.
1992 APR	.050	BDL	.	.	.	.
GROSS BETA COUNT (BQ/L)			DET'N LIMIT = 0.04		GUIDELINE = N/A	
1991 FEB	.100	.090	.	.	.	.
1991 SEP	.090	.090	.	.	.	.
1992 APR	.080	.070	.	.	.	.
TRITIUM (BQ/L)			DET'N LIMIT = 7.00		GUIDELINE = 40000 (A1)	
1991 FEB	9.000	BDL	.	.	.	.
1991 SEP	BDL	BDL	.	.	.	.
1992 APR	22.000	12.000	.	.	.	.
IODINE 131 (BQ/L)			DET'N LIMIT = 0.70		GUIDELINE = 10 (A1)	
6 SAMPLES	BDL	BDL	.	.	.	.

TABLE 5
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
BACTERIOLOGICAL				
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0	(A1)
STANDARD PLATE COUNT MEMBRANE FILT.	CT/ML	0	500/ML	(A3)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A	
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100ML	(A1)
CHEMISTRY (FLD)				
FIELD COMBINED CHLORINE RESIDUAL	MG/L	0	N/A	
FIELD TOTAL CHLORINE RESIDUAL	MG/L	0	N/A	
FIELD FREE CHLORINE RESIDUAL	MG/L	0	N/A	
FIELD PH	DMNSLESS	N/A	6.5-8.5	(A4)
FIELD TEMPERATURE	DEG.C	N/A	15.0	(A3)
FIELD TURBIDITY	FTU	N/A	1.0	(A1)
CHEMISTRY (LAB)				
ALKALINITY	MG/L	0.20	30-500	(A4)
AMMONIUM TOTAL	MG/L	0.002	0.05	(F2)
CALCIUM	MG/L	0.20	100.0	(F2)
CHLORIDE	MG/L	0.20	250.0	(A3)
COLOUR	TCU	0.50	5.0	(A3)
CONDUCTIVITY	UMHO/CM	1.00	400.0	(F2)
CYANIDE	MG/L	0.001	0.2	(A1)
DISSOLVED ORGANIC CARBON	MG/L	0.10	5.0	(A3)
FLUORIDE	MG/L	0.01	1.5*	(A1)
HARDNESS	MG/L	0.50	80-100	(A4)
IONCAL	DMNSLESS	N/A	N/A	
LANGELIERS INDEX	DMNSLESS	N/A	N/A	
MAGNESIUM	MG/L	0.10	30.0	(F2)
NITRATES (TOTAL)	MG/L	0.005	10.0	(A1)
NITRITE	MG/L	0.001	1.0	(A1)
NITROGEN TOTAL KJELDAHL	MG/L	0.02	N/A	
PH	DMNSLESS	N/A	6.5-8.5	(A4)
PHOSPHORUS FIL REACT	MG/L	0.0005	N/A	
PHOSPHORUS TOTAL	MG/L	0.002	0.4	(F2)
POTASSIUM	MG/L	0.010	10.0	(F2)
RESIDUE FILTRATE (CALCULATED TDS)	MG/L	N/A	500.0	(A3)
SODIUM	MG/L	0.20	200.0	(A4)
SULPHATE	MG/L	0.20	500.0	(A4)
TURBIDITY	FTU	0.05	1.0	(A1)

* The Maximum Acceptable Concentration (MAC) for <u>naturally occurring fluoride</u> in drinking water is 2.4 mg/L.

CHLOROAROMATICS				
1,2,3-TRICHLOROBENZENE	NG/L	5.0	N/A	
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.0	N/A	
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.0	N/A	
1,2,4-TRICHLOROBENZENE	NG/L	5.0	10000	(I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.0	38000	(D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.0	N/A	
2,3,6-TRICHLOROTOLUENE	NG/L	5.0	N/A	
2,4,5-TRICHLOROTOLUENE	NG/L	5.0	N/A	
2,6A-TRICHLOROTOLUENE	NG/L	5.0	N/A	
HEXACHLOROBENZENE (HCB)	NG/L	1.0	10	(C1)
HEXACHLOROBUTADIENE	NG/L	1.0	450	(D4)
HEXACHLOROETHANE	NG/L	1.0	1900	(D4)
OCTACHLOROSTYRENE	NG/L	1.0	N/A	
PENTACHLOROBENZENE	NG/L	1.0	74000	(D4)
CHLOROPHENOLS				
2,3,4-TRICHLOROPHENOL	NG/L	100.0	N/A	
2,3,4,5-TETRACHLOROPHENOL	NG/L	20.0	N/A	
2,3,5,6-TETRACHLOROPHENOL	NG/L	10.0	N/A	

TABLE 5
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
2,4,5-TRICHLOROPHENOL	NG/L	100.0	2600000	(D4)
2,4,6-TRICHLOROPHENOL	NG/L	20.0	5000	(A1)
PENTACHLOROPHENOL	NG/L	10.0	60000	(A1)
METALS				
ALUMINUM	UG/L	0.10	100	(A4)
ANTIMONY	UG/L	0.05	146	(D4)
ARSENIC	UG/L	0.10	25	(A1)
BARIUM	UG/L	0.05	1000	(A2)
BERYLLIUM	UG/L	0.05	6800	(D4)
BORON	UG/L	2.00	5000	(A1)
CADMIUM	UG/L	0.05	5	(A1)
CHROMIUM	UG/L	0.50	50	(A1)
COBALT	UG/L	0.02	N/A	
COPPER	UG/L	0.50	1000	(A3)
IRON	UG/L	6.00	300	(A3)
LEAD	UG/L	0.05	10	(A1)
MANGANESE	UG/L	0.05	50	(A3)
MERCURY	UG/L	0.02	1	(A1)
MOLYBDENUM	UG/L	0.05	N/A	
NICKEL	UG/L	0.20	350	(D3)
SELENIUM	UG/L	1.00	10	(A1)
SILVER	UG/L	0.05	N/A	
STRONTIUM	UG/L	0.10	N/A	
THALLIUM	UG/L	0.05	13	(D4)
TITANIUM	UG/L	0.50	N/A	
URANIUM	UG/L	0.05	100	(A1)
VANADIUM	UG/L	0.05	N/A	
ZINC	UG/L	0.20	5000	(A3)
POLYNUCLEAR AROMATIC HYDROCARBONS				
ANTHRACENE	NG/L	1.0	N/A	
BENZO(A) ANTHRACENE	NG/L	20.0	N/A	
BENZO(A) PYRENE	NG/L	5.0	10	(A1)
BENZO(B) CHRYSENE	NG/L	2.0	N/A	
BENZO(B) FLUORANTHENE	NG/L	10.0	N/A	
BENZO(E) PYRENE	NG/L	50.0	N/A	
BENZO(G,H,I) PERYLENE	NG/L	20.0	N/A	
BENZO(K) FLUORANTHENE	NG/L	1.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
CORONENE	NG/L	10.0	N/A	
DIBENZO(A,H) ANTHRACENE	NG/L	10.0	N/A	
DIMETHYL BENZO(A) ANTHRACENE	NG/L	5.0	N/A	
FLUORANTHENE	NG/L	20.0	42000	(D4)
INDENO(1,2,3-C,D) PYRENE	NG/L	20.0	N/A	
PERYLENE	NG/L	10.0	N/A	
PHENANTHRENE	NG/L	10.0	N/A	
PYRENE	NG/L	20.0	N/A	
PESTICIDES & PCB				
ALACHLOR (LASSO)	NG/L	500.0	5000	(A2)
ALDRIN	NG/L	1.0	700	(A1)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700	(G)
ALPHA CHLORDANE	NG/L	2.0	7000	(A1)
AMETRINE	NG/L	50.0	300000	(D3)
ATRATONE	NG/L	50.0	N/A	
ATRAZINE	NG/L	50.0	60000	(A2)
DESETHYL ATRAZINE	NG/L	200.0	60000	(A2)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300	(G)
CYANAZINE (BLADEX)	NG/L	100.0	10000	(A2)
DIELDRIN	NG/L	2.0	700	(A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000	(D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	5.0	74000	(D4)
ENDOSULFAN SULPHATE (THIODAN SULPHATE)	NG/L	5.0	N/A	

TABLE 5
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
ENDRIN	NG/L	5.0	1600	(D3)
GAMMA CHLORDANE	NG/L	2.0	7000	(A1)
HEPTACHLOR	NG/L	1.0	3000	(A1)
HEPTACHLOR EPOXIDE	NG/L	1.0	3000	(A1)
HEXACHLOROCYCLOPENTADIENE	NG/L	5.0	206000	(D4)
LINDANE (GAMMA BHC)	NG/L	1.0	4000	(A1)
METHOXYCHLOR	NG/L	5.0	900000	(A1)
METOLACHLOR	NG/L	500.0	50000	(A2)
METRIBUZIN (SENCOR)	NG/L	100.0	80000	(A1)
MIREX	NG/L	5.0	N/A	
P,P-DDD	NG/L	5.0	30000	(A1)
O,P-DDT	NG/L	5.0	30000	(A1)
P,P-DDT	NG/L	5.0	30000	(A1)
P,P-DDE	NG/L	1.0	30000	(A1)
OXYCHLORDANE	NG/L	2.0	N/A	
PCB	NG/L	20.0	3000	(A2)
PROMETONE	NG/L	50.0	52500	(D3)
PROMETRYNE	NG/L	50.0	1000	(A2)
PROPAZINE	NG/L	50.0	700000	(D3)
SIMAZINE	NG/L	50.0	10000	(A2)
DESETHYL SIMAZINE	NG/L	200.0	10000	(A2)
TOXAPHENE	NG/L	500.0	5000	(A1)
PHENOLICS				
PHENOLICS (UNFILTERED REACTIVE)	UG/L	0.2	N/A	
SPECIFIC PESTICIDES				
2,4 D PROPIONIC ACID	NG/L	100.0	N/A	
2,4,5-TRICHLOROPHENOXY ACETIC ACID	NG/L	50.0	280000	(A1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.0	100000	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID (2,4-DB)	NG/L	200.0	N/A	
2,4,5-TP (SILVEX)	NG/L	20.0	10000	(A1)
BUTYLATE (SUTAN)	NG/L	2000.0	245000	(D3)
CARBARYL (SEVIN)	NG/L	200.0	90000	(A1)
CARBOFURAN	NG/L	2000.0	90000	(A1)
CHLORPROPHAM (CIPC)	NG/L	2000.0	350000	(G)
CHLORPYRIFOS (DURSBAN)	NG/L	20.0	N/A	
DIALLATE	NG/L	2000.0	N/A	
DIAZINON	NG/L	20.0	20000	(A1)
DICAMBA	NG/L	50.0	120000	(A1)
DICHLOROVOS	NG/L	20.0	N/A	
EPTAM	NG/L	2000.0	N/A	
ETHION	NG/L	20.0	35000	(G)
IPC	NG/L	2000.0	N/A	
MALATHION	NG/L	20.0	190000	(A1)
METHYL PARATHION	NG/L	50.0	9000	(D3)
METHYLTRITHION	NG/L	20.0	N/A	
MEVINPHOS	NG/L	20.0	N/A	
PARATHION	NG/L	20.0	50000	(A1)
PHORATE (THIMET)	NG/L	20.0	2000	(A2)
PICHLORAM	NG/L	100.0	190000	(A2)
PROPOXUR (BAYGON)	NG/L	2000.0	140000	(D3)
RELDAN	NG/L	20.0	N/A	
RONNEL	NG/L	20.0	N/A	
VOLATILES				
1,1-DICHLOROETHANE	UG/L	0.10	N/A	
1,1-DICHLOROETHYLENE	UG/L	0.10	7	(D1)
1,2-DICHLOROBENZENE	UG/L	0.05	200	(A1)
1,2-DICHLOROETHANE	UG/L	0.05	5	(A1)
1,2-DICHLOROPROPANE	UG/L	0.05	5	(D1)
1,3-DICHLOROBENZENE	UG/L	0.10	3750	(D3)
1,4-DICHLOROBENZENE	UG/L	0.10	5	(A1)
1,1,1-TRICHLOROETHANE	UG/L	0.02	200	(D1)
1,1,2-TRICHLOROETHANE	UG/L	0.05	0.6	(D4)
1,1,2,2-TETRACHLOROETHANE	UG/L	0.05	0.17	(D4)

TABLE 5
DRINKING WATER SURVEILLANCE PROGRAM 1991 AND 1992

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
BENZENE	UG/L	0.05	5	(A1)
BROMOFORM	UG/L	0.20	350	(A1+)
CARBON TETRACHLORIDE	UG/L	0.20	5	(A1)
CHLOROBENZENE	UG/L	0.10	1510	(D3)
CHLORODIBROMOMETHANE	UG/L	0.10	350	(A1+)
CHLOROFORM	UG/L	0.10	350	(A1+)
CIS 1,2-DICHLOROETHYLENE	UG/L	0.10	70	(D1)
DICHLOROBROMOMETHANE	UG/L	0.05	350	(A1+)
ETHYLENE DIBROMIDE	UG/L	0.05	50	(D1)
ETHYLBENZENE	UG/L	0.05	2.4	(A3)
M-XYLENE	UG/L	0.10	300	(A3*)
METHYLENE CHLORIDE	UG/L	0.50	50	(A1)
O-XYLENE	UG/L	0.05	300	(A3*)
P-XYLENE	UG/L	0.10	300	(A3*)
STYRENE	UG/L	0.05	100	(D1)
TETRACHLOROETHYLENE	UG/L	0.05	65	(A5)
TRANS 1,2-DICHLOROETHYLENE	UG/L	0.10	70	(D1)
TOLUENE	UG/L	0.05	24	(A3)
TOTAL TRIHALOMETHANES	UG/L	0.50	350	(A1)
TRICHLOROETHYLENE	UG/L	0.10	50	(A1)
VINYL CHLORIDE	UG/L	0.10	2	(D1)
RADIONUCLIDES				
TRITIUM	BQ/L	7.0	40000	(A1)
GROSS ALPHA COUNT	BQ/L	0.04	0.55#	(D1)
GROSS BETA COUNT	BQ/L	0.04	N/A	
COBALT 60	BQ/L	0.70	N/A	
CESIUM 134	BQ/L	0.70	N/A	
CESIUM 137	BQ/L	0.70	50	(A1)
IODINE 131	BQ/L	0.70	10	(A1)

Equal to 15.0 Picocuries/litre

Appendix A

DRINKING WATER SURVEILLANCE PROGRAM
PROGRAM DESCRIPTION

The Drinking Water Surveillance Program (DWSP) for Ontario monitors drinking water quality at municipal water supply systems. The DWSP Database Management System provides a computerized drinking water quality information system for the supplies monitored. The objectives of the program are to provide:

- immediate, reliable, current information on drinking water quality;
- a flagging mechanism for guideline exceedance;
- a definition of contaminant levels and trends;
- a comprehensive background for remedial action;
- a framework for assessment of new contaminants; and
- an indication of treatment efficiency of plant processes.

PROGRAM

The DWSP officially began in April 1986 and is designed to eventually include all municipal water supplies in Ontario. In 1992, 109 systems were being monitored. Water supply locations have been prioritized for surveillance based primarily on criteria such as population density, probability of contamination and geographical location.

An ongoing assessment of future monitoring requirements at each location will be made. Monitoring will continue at the initial locations at an appropriate level and further locations will be phased into the program as resources permit.

A major goal of the program is to collect valid water quality data in context with plant operational characteristics at the time of sampling. As soon as sufficient data have been accumulated and analyzed, both the frequency of sampling and the range of parameters may be adjusted accordingly.

Assessments are carried out at all locations prior to initial sampling, in order to acquire complete plant process and distribution system details and to designate (and retrofit if necessary) all sampling systems and locations. This ensures that the sampled water is a reflection of the water itself.

Samples are taken of raw (ambient water) and treated water at the treatment plant and of consumer's tap water in the distribution system. In order to determine possible effects of distribution on water quality, both standing and free flow water in old and new sections of the distribution system are sampled. Sampling is carried out by operational personnel who have been trained in applicable procedures.

Comprehensive standardized procedures and field test kits are supplied to sampling personnel. This ensures that samples are taken and handled according to standard protocols and that field testing will supply reliable data. All field and laboratory analyses are carried out using "approved documented procedures". Most laboratory analyses are carried out by the Ministry of Environment and Energy (MOEE), Laboratory Services Branch. Radionuclides are analyzed by the Ministry of Labour.

DATA REPORTING MECHANISM

When the analytical results are transferred from the MOEE laboratory into the DWSP system, printouts of the completed analyses are sent to the MOEE District Officer, the appropriate operational staff and are also retained by the DWSP unit.

PROGRAM INPUTS AND OUTPUTS

There are four major inputs and four major outputs in the program.

Program Input - Plant and Distribution System Description

The system description includes plant specific non-analytical information acquired through a questionnaire and an initial plant visit. During the initial assessment of the plant and distribution system, questionnaire content is verified and missing information added. It is intended that all data be kept current with scheduled annual updates.

The Plant and Distribution System Description consists of the following seven components:

1. PROCESS COMPONENT INVENTORY
All physical and chemical processes to which the water is subjected, from the intake pipe to the consumers' tap (where possible), are documented. These include: process type, general description of physical structures, material types, sizes, and retention time for each process within the plant. The processes may be as simple as transmission or as complex as carbon adsorption.

2. TREATMENT CHEMICALS
Chemicals used in the treatment processes, their function, application point, supplier and brand-name are recorded. Chemical dosages applied on the day of sampling are recorded in DWSP.

3. PROCESS CONTROL MEASUREMENTS
Documentation of in-plant monitoring of process parameters (eg. turbidity, chlorine residuals, pH, aluminum residuals) including methods used, monitoring locations and frequency is contained in this section. Except for the recorded Field Data, in-plant monitoring results are not retained in DWSP but are retained by the water treatment plant personnel.

4. DESIGN FLOW AND RETENTION TIME
Hydraulic capacity, designed and actual, is noted here. Retention time (the time that a block of water is retained in the plant) is also noted. Maximum, minimum and average flow, as well as a record of the flow rate on the day of sampling, are recorded in DWSP.

5. DISTRIBUTION SYSTEM DESCRIPTION
This area includes the storage and transmission characteristics of the distribution system after the water leaves the plant.

6. SAMPLING SYSTEM

Each plant is assessed for its adequacy in terms of the sampling of bacteriological, organic and inorganic parameters. Prime considerations in the assessment and design of the sampling system are:

i/ the sample is an accurate representation of the actual water condition, eg. raw water has had no chemical treatment;

ii/ the water being sampled is not being modified by the sampling system;

iii/ the sample tap must be in a clean area of the plant, preferably a lab area; and

iv/ the sample lines must be organically inert (no plastic, ideally stainless steel).

It is imperative that the sampled water be a reflection not of the sampling system but of the water itself.

The sampling system documentation includes: origin of the water; date sampling was initiated; size, length and material type (intake, discharge and tap); pump characteristics (model, type, capacity); and flow rate.

7. PERSONNEL

This section contains the names, addresses and phone numbers of current plant management and operational staff, distribution system management and operational staff, Medical Officer of Health and appropriate MOEE personnel associated with the plant.

Program Input - Field Data

The second major input to DWSP is field data. Field data is collected at the plant and from the distribution system sites on the day of sampling. Field data consists of general operating conditions and the results of testing for field parameters. General operating conditions include chemicals used, dosages, flow and retention time on the day of sampling, as well as, monthly maximum, minimum and average flows. Field parameters include turbidity, chlorine residuals (free, combined and total), temperature and pH. These parameters are analyzed according to standardized DWSP protocols to allow for interplant comparison.

Program Input - Laboratory Analytical Data

The third major input to DWSP is Laboratory Analytical Data. Samples gathered from the raw, treated and distribution sampling sites are analyzed for the presence of approximately 180 parameters at a frequency of two to twelve times per year. Sixty-five percent of the parameters are organic. Parameters measured may have health or aesthetic implications when present in drinking water. Many of the parameters may be used in the treatment process or may be treatment by-products. Due to the nature of certain analytical instruments, parameters may be measured in a "scan" producing some results for parameters that are not on the DWSP priority list, but which may be of interest. The majority of parameters are measured on a routine basis. Those that are technically more difficult and/or costly to analyze, however, are done less frequently. These include Specific Pesticides and Chlorophenols.

Although the parameter list is extensive, additional parameters with the potential to cause health or aesthetic related problems may be added provided reliable analytical and sampling methods exist.

All laboratory generated data is derived from standardized, documented analytical protocols. The analytical method is an integral part of the data and as methods change, notation will be made and comparison data documented.

Program Input - Parameter Reference Information

The fourth major input to DWSP is Parameter Reference Information. This is a catalogue of information for each substance analyzed on DWSP. It includes parameter name and aliases, physical and chemical properties, basic toxicology, world-wide health limits, treatment methods and uses. The Parameter Reference Information is computerized and can be accessed through the Query function of the DWSP database. An example is shown in figure 1.

Program output - Query

All DWSP information is easily accessed through the Query function, therefore, anything from addresses of plant personnel to complete water quality information for a plant's water supply is instantly available. The DWSP computer system makes relatively complex inquiries manageable. A personal password allowing access into the DWSP query mode in all MOEE offices is being developed by the DWSP group.

Program Output - Action Alerts

Drinking Water quality in Ontario is evaluated against provincial objectives as outlined in the Ontario Drinking Water Objectives publication. Should the reported level of a substance in treated water exceed the Ontario Drinking Water Objective, an "Action Alert" requiring resampling and confirmation is issued. This assures that operational staff, health authorities and the public are notified as soon as possible of the confirmation of an exceedance and remedial action taken. This report supplies a history of the occurrence of past exceedances at the plant plus a historical summary on the parameter of concern.

In the absence of Ontario Drinking Water Objectives, guidelines/limits from other agencies are used. The Parameter Listing System, published by MOEE (ISBN 0-7729-4461-X), catalogues and keeps current guidelines for 650 parameters from agencies throughout the world. If these guidelines are exceeded, the results are flagged and evaluated by DWSP personnel. An "Action Alert" will be issued if warranted.

Program Output - Report Generation

Custom reports can be generated from DWSP to meet MOEE Regional needs and to respond to public requests.

Program Output - Annual Reports

It is the practice of DWSP to produce an annual report containing analytical data along with companion plant information.

FIG.1

PARAMETER REFERENCE INFORMATION

NAME:	BENZENE
CAS#:	71-43-2
MOLECULAR FORMULAE:	C_6H_6
DETECTION LIMIT:	(FOR METHOD POCODO) 0.05 µg/L
SYNONYMS:	BENZOL; BENZOLE; COAL NAPHTHA; CARBON OIL (27) CYCLOHEXATRIENE (41)
CHARACTERISTICS:	COLOURLESS TO LIGHT-YELLOW, MOBILE, NONPOLAR LIQUID, OF HIGHLY REFRACTIVE NATURE, AROMATIC ODOUR; VAPOURS BURN WITH SMOKING FLAME (30)
PROPERTIES:	SOLUBILITY IN WATER: 1780-1800 mg/L AT 25C (41) THRESHOLD ODOUR: 0.5 - 10 PPM IN WATER THRESHOLD TASTE: 0.5 mg/L IN WATER (39) ENVIRONMENTAL FATE: MAY BIOACCUMULATE IN LIVING ORGANISMS AND APPEARS TO ACCUMULATE IN ANIMAL TISSUES THAT EXHIBIT A HIGH LIPID CONTENT OR REPRESENT MAJOR METABOLIC SITES, SUCH AS LIVER OR BRAIN; SMALL QUANTITIES EVAPORATE FROM SOILS OR ARE DEGRADED RATHER QUICKLY (80)
SOURCES:	COMMERCIAL: PETROLEUM REFINING; SOLVENT RECOVERY; COAL TAR DISTILLATION (39); FOOD PROCESSING AND TANNING INDUSTRIES; COMBUSTION OF CAR EXHAUST. ENVIRONMENTAL: POSSIBLE SOURCE IS RUNOFF.
USES:	DETERGENTS; NYLON; INTERMEDIATE IN PRODUCTION OF OTHER COMPOUNDS, SUCH AS PESTICIDES; SOLVENT FOR EXTRACTION AND RECTIFICATION IN RUBBER INDUSTRY; DEGREASING AND CLEANSING AGENT; GASOLINE.
REMOVAL:	THE FOLLOWING PROCESSES HAVE BEEN SUCCESSFUL IN REMOVING BENZENE FROM WASTEWATER: GAC ADSORPTION, PRECIPITATION WITH ALUM AND SUBSEQUENT REMOVAL VIA SEDIMENTATION, COAGULATION AND FLOCCULATION, SOLVENT EXTRACTION, OXIDATION
ADDITIONAL PROPERTIES:	MOLECULAR WEIGHT: 78.12 MELTING POINT: 5.5°C (27) BOILING POINT: 80.1°C (27) SPECIFIC GRAVITY: 0.8790 AT 20°C (27) VAPOUR PRESSURE: 100 MM AT 26.1°C (27) HENRY'S LAW CONSTANT: 0.00555 ATM-M3/MOLE (41) LOG OCT./WATER PARTITON COEFFICIENT: 1.95 TO 2.13 (39) CARBON ADSORPTION: K=1.0; 1/N=1.6; R=0.97; PH=5.3 (41) SEDIMENT/WATER PARTITION COEFFICIENT: NO DATA

Appendix B

DWSP SAMPLING GUIDELINE

i) Raw and Treated at Plant

General Chemistry	-500 mL plastic bottle (PET 500) -rinse bottle and cap with sample water three times -fill to 2 cm from top
Bacteriological	-220 mL plastic bottle with white seal on cap -do not rinse bottle, preservative has been added -avoid touching bottle neck or inside of cap -fill to top of red label as marked
Metals	-500 mL plastic bottle (PET 500) -rinse bottle and cap three times -fill to 2 cm from top -add 10 drops nitric acid (HNO_3) (**Caution:** HNO_3 is corrosive)
Volatiles (duplicates) (OPOPUP)	-45 mL glass vial with septum (teflon side must be in contact with sample) -do not rinse bottle -fill bottle completely without bubbles
Organics (OWOC),(OWTRI)	-1 L amber glass bottle per scan -do not rinse bottle -fill to 2 cm from top
Specific Pesticides (OWCP),(PEOP),(PECAR)	-as per Organics -three extra bottles must be filled
Polyaromatic hydrocarbons (OAPAHX)	-1 L amber glass bottle per scan -do not rinse bottle -fill to 2 cm from top -add 25 drops of sodium thiosulphate
Cyanide (Treated only)	-500 mL plastic bottle (PET 500) -rinse bottle and cap three times -fill to 2 cm from top -add 10 drops sodium hydroxide (NaOH) (**Caution:** NaOH is corrosive)
Mercury	-250 mL glass bottle -rinse bottle and cap three times -fill to top of label -add 20 drops each nitric acid (HNO_3) and potassium dichromate ($K_2Cr_2O_7$) (**Caution:** HNO_3&$K_2Cr_2O_7$ are corrosive)

Phenols	-250 mL glass bottle -do <u>not</u> rinse bottle, preservative has been added -fill to top of label
Radionuclides (as scheduled)	-4 L plastic jug -do <u>not</u> rinse, carrier added -fill to 5 cm from top
Organic Characterization (GC/MS - once per year) (PBVOL),(PBEXT)	-1 L amber glass bottle; instructions as per organic -250 mL glass bottle -do <u>not</u> rinse bottle -fill completely without bubbles

<u>Steps:</u>

1. Let sampling water tap run for an adequate time to clear the sample line.
2. Record time of day on submission sheet.
3. Record temperature on submission sheet.
4. Fill up all bottles as per instructions.
5. Record chlorine residuals (free, combined and total for treated water only), turbidity and pH on submission sheet.
6. No smoking in area of sample location.

ii) Distribution Samples (standing water)

General Chemistry	-500 mL plastic bottle (PET 500) -rinse bottle and cap with sample water three times -fill to 2 cm from top
Metals	-500 mL plastic bottle (PET 500) -rinse bottle and cap three times -fill to 2 cm from top -add 10 drops nitric acid (HNO_3) (**Caution:** HNO_3 is corrosive)

<u>Steps:</u>

1. Record time of day on submission sheet.
2. Place bucket under tap and open cold water.
3. Fill to predetermined volume.
4. After mixing the water, record the temperature on the submission sheet.

5. Fill general chemistry and metals bottles.

6. Record chlorine residuals (free, combined and total), turbidity and pH on submission sheet.

iii) Distribution Samples (free flow)

General Chemistry	-500 mL plastic bottle (PET 500) -rinse bottle and cap with sample water three times -fill to 2 cm from top
Bacteriological	-250 mL plastic bottle with white seal on cap -do <u>not</u> rinse bottle, preservative has been added -avoid touching bottle neck or inside of cap -fill to top of red label as marked
Metals	-500 mL plastic bottle (PET 500) -rinse bottle and cap three times -fill to 2 cm from top -add 10 drops nitric acid HNO_3 (**Caution:** HNO_3 is corrosive)
Volatiles (duplicate) (OPOPUP)	-45 mL glass vial with septum (teflon side must be in contact with sample) -do <u>not</u> rinse bottle, preservative has been added -fill bottle completely without bubbles
Organics (OWOC)	-1 L amber glass bottle per scan -do <u>not</u> rinse bottle -fill to 2 cm from top
Polyaromatic Hydrocarbons (OAPAHX)	-1 L amber glass bottle per scan -do <u>not</u> rinse bottle -fill to 2 cm from top -add 25 drops of sodium thiosulphate

<u>Steps:</u>

1. Record time of day on submission sheet.

2. Let cold water flow for five minutes.

3. Record temperature on submission sheet.

4. Fill all bottles as per instructions.

5. Record chlorine residuals (free, combined and total), turbidity and pH on submission sheet.

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